

# **Use of image-based social media in dancers and non-dancers**

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Submitted in accordance with the requirements for the degree of  
Doctor of Clinical Psychology (D. Clin. Psychol.)

The University of Leeds

School of Medicine

Academic Unit of Psychiatry and Behavioural Sciences

August, 2019

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## **Acknowledgements**

Firstly, to my thesis supervisors Professor Andy Hill and Dr Gemma Traviss-Turner, thank you so much for your constructive feedback, knowledge and support throughout. Thank you to all of those who helped with recruitment, in particular Tracy Witney from Northern School of Contemporary Dance and Yasmin Delves from Northern Ballet, who were so helpful and accommodating in getting the project off the ground. Thank you of course to all the participants who completed the survey, without your input there would be no project! Tom, thank you for being there for me throughout this whole process, for providing ongoing words of encouragement and for all the much-needed laughs! Finally, to my family and especially my Mum, Dad and sister Holly, your love and belief in me during all these years of studying towards a career in clinical psychology has been paramount. I'm extremely lucky to have such a great support system. Thank you.

## **Abstract**

**Introduction:** Recent reports have called for further research on young people's use of social media and the associations with their mental health. In aesthetic sports such as dance, there is emphasis on body-shape and appearance. This study is the first to investigate Instagram use in young dancers and non-dancers and its relationship with self-objectification, body surveillance, disordered eating and depressed mood.

**Method:** Eighty five dancers and 91 non-dancers aged between 14 -26 completed self-report measures of social media use, self-objectification, body surveillance, disordered eating and depressed mood.

**Results:** Instagram was the most frequently used social media platform, with participants spending 30 minutes per day on Instagram and checking Instagram every hour. Dancers used Instagram more than non-dancers. Dancers reported different motivations for using Instagram, namely information sharing, self-documentation and self-expression, as well as for self-presentation activities and looking at photographs of others. There was no significant relationship between any of the body related, disordered eating or depressed mood variables and Instagram use for dancers. In the whole sample, participants with higher body surveillance used Instagram for self-presentation activities, those with higher disordered eating used it more for comparing self-photographs to photographs of others and those with higher levels of depressed mood used it more for passing time.

**Conclusion:** Dancers appear to use Instagram more and for different purposes to non-dancers, including self-presentation. Instagram use was not associated with any of the psychological vulnerabilities measured in this study for dancers, although some associations were found for the whole sample. This is a positive finding for dancers and suggests active use of Instagram may not be so troublesome in this group. Other implications of the findings and future directions are discussed within.

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## **Introduction**

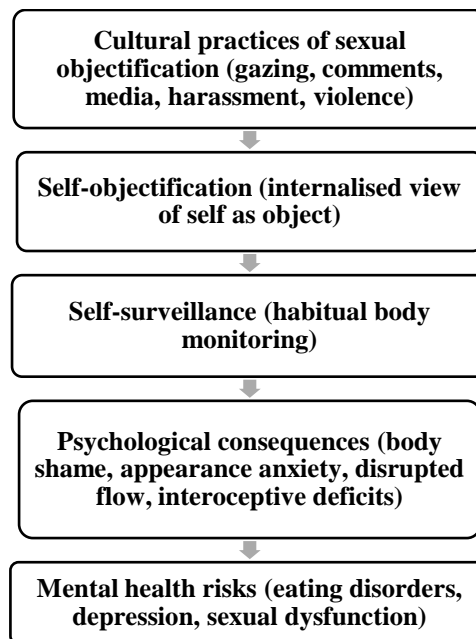
Recent reports have called for further research on young people's use of social media and the associations with their mental health (Royal Society for Public Health and Young Health Movement, 2017; Ditch the Label, 2017; Frith, 2017).

Conventional forms of media (such as magazines and television) have been shown to have an impact on aspects of mental health including body image concerns and eating pathology (Agliata & Tantleff-Dunn, 2004; Grabe, Ward & Hyde, 2008).

This research has begun to be extended to consider newer forms of media, including social media platforms. Within the world of dance there is an emphasis on body image and associated risks of disordered eating and self-objectification (Tiggemann & Slater, 2001; Langdon & Petracca, 2010; Alexias & Dimitropoulou, 2011; McEwen & Young, 2011; Arcelus, Witcomb & Mitchell, 2014). Self-objectification is a process whereby cultural practices of sexual objectification lead to an internalised view of one's self as an object and results in self-surveillance, psychological consequences and mental health risks (Figure 1; Calogero, Tantleff-Dunn & Thompson, 2011). The concept of self-objectification will be discussed further on in this literature review. Currently, no research exists which explores social media use within a dance population. Therefore, this study aimed to investigate this and is an original contribution to the research literature.

Technology and the media have developed rapidly in the last twenty years (Coyne, Padilla-Walker & Howard, 2013), including the introduction of social media platforms. Social media are internet-based channels of mass communication, which allow users to easily access, interact with and generate a wide range of content (Carr & Hayes, 2015). Ninety-one per cent of 16 to 24-year olds in the United Kingdom use social media (Royal Society for Public Health and Young Health Movement, 2017), with 61 per cent of young people reporting that they could not go more than one day without checking their social media accounts (Ditch the Label, 2017).

Reports highlight the increasing use of social media and links with young people's mental health in the United Kingdom (Royal Society for Public Health and Young Health Movement, 2017; Ditch the Label, 2017; Frith, 2017). These call for further research to better understand how and why young people use social media and the associations with their mental health.



**Figure 1. A model of objectification theory as proposed by Fredrickson and Roberts (1997) from Calogero et al., (2011)**

### **Instagram**

Image-based social media platforms including Instagram are popular in young people and used more frequently than any other social media site (Duggan, 2015; Marengo, Longobardi, Fabris & Settanni, 2018). Instagram is one of the fastest growing social media platforms with over 500 million daily activities and over 95 million photos and videos shared per day (Instagram, 2018). It is an image-based mobile application in which users can take photographs or videos, apply filters to them and share them. Users can also view pictures, photographs and videos shared by others. Posts can receive both likes and comments and users can add hashtags (#) to their posts to allow others to view them more easily. Connections on Instagram are nonreciprocal, meaning users can choose to follow another user without them following back. Profiles can be public, allowing users to view posts from people they are not connected to offline, or can be private whereby followers must be confirmed by the individual. Of the top five social media platforms (Facebook, Instagram, Snapchat, Twitter and Youtube), Instagram has been found to have the most negative impact on young people's mental health (Royal Society for Public

Health and Young Health Movement, 2017). Due to its popularity, it is important to study the associations between Instagram use in young people and psychological variables which may impact on mental health.

### **Dance, psychological vulnerability and the media**

The current study proposes to focus on young people training in dance. This is due to the emphasis on body image evident in the world of dance and the associated risks of self-objectification and disordered eating (Tiggemann & Slater, 2001; Langdon & Petracca, 2010; Alexias & Dimitropoulou, 2011; McEwen & Young, 2011; Arcelus et al., 2014). High levels of self-objectification, striving for the ideal body, body surveillance and disordered eating patterns have been reported by dancers (Tiggemann & Slater, 2001; Dryburgh & Fortin, 2010; Francisco, Alarcão & Narciso, 2012). A systemic review and meta-analysis found that dancers were three times more likely to have an eating disorder than the general population (Arcelus et al., 2014).

Risk factors which have been cited for eating disorders within the dance population include teachers' influence, the use of mirrors in practice, and revealing costumes or uniform (Nordin-Bates, Walker & Redding, 2011; Dantas, Alonso, Sánchez-Miguel & del Río Sánchez, 2018). However, some researchers have argued that engaging in dance is a protective factor for body image concerns and eating pathology (Oliver, 2008) and may improve body image perception (Monteiro, Alves, Graça Fernandes, dos Santos & da Silva Novaes, 2018). This is thought to be because it enhances a positive body image and self-esteem (Minton, 2001; Burgess, Grogan & Burwitz, 2006). It is likely that the impact of dance on body image concerns and eating pathology is complex and dependent on several factors (Monteiro et al., 2018).

The impact of dance on body image may vary according to level of dance participation. A systemic review indicated that dancers with more experience appeared to be more dissatisfied with their body image (Monteiro et al., 2018). Other research has highlighted that although professional dancers tend to be more appreciative of their bodies, they are often more preoccupied with their body weight and strive to achieve an ideal body compared to their beginner counterparts (Pollatou, Bakali, Theodorakis & Goudas, 2010; Swami & Harris, 2012). The

impact of dance on body image may also vary according to genre of dance. High levels of body dissatisfaction are reported in ballet dancers (Ravaldi et al., 2003; García-Dantas, Del Río, Sánchez-Martín, Avargues & Borda, 2013), whereas more athletically focused genres such as street dancing have been associated with increased body appreciation (Swami & Tovée, 2009).

Within dance the concept of body image is not just focused on maintaining a certain body weight, but also through perceived body “flaws” such as bow legs or a hyperextended back (Alexias & Dimitropoulou, 2011). This suggests that body function is an important aspect of body image for dancers, as they rely on their bodies as the main tool for expression (Milavic & Miletic, 2012). Therefore, it is important to consider both appearance-related and function-related concepts when exploring body image concerns in dancers. A limitation of the literature on body image concerns within dancers (which extends to the research on athletes and the general population, including the literature on social media and body image concerns), is that a huge variety of body image constructs have been used within the research (e.g. measuring body satisfaction, body appreciation, body surveillance, striving for a thin/athletic-ideal etc.). This may partly account for differences found between studies.

Previous research has investigated conventional media, dancers’ self-perception and psychological vulnerability. The findings tend to mirror those demonstrated in the general population. For example, dancers report a pressure to embody the culture of slenderness portrayed in television commercials and fashion magazines and media influence appears to predict body dissatisfaction (Heiland, Murray & Edley, 2008; Nerini, 2015; Mills & Dee, 2016). However, unlike the general population, internalisation of an athletic-ideal rather than a thin-ideal from the media appears to be more important in a dance population (Swami & Tovée, 2009; Nerini, 2015). There is no existing research on the use of social media and its associations with self-objectification, body surveillance, disordered eating or depressed mood for dancers or any research which explores how and why dancers use social media. The present study aims to address this gap in the literature.

### **Sport/exercise, psychological vulnerability and the media**

It is important to consider research on dancers within the broader literature on athletes. Some studies have suggested that athletes tend to be satisfied with their bodies (De Bruin, Oudejans, Bakker & Woertman, 2011). Despite this, prevalence rates of disordered eating have been found to be higher in those who engage in sport and exercise compared to the general population (Bratland-Sanda & Sundgot-Borgen, 2013). These findings are particularly evident in sports in which there is an emphasis on aesthetic appearance including thinness or muscularity (e.g. body building and gymnastics; Raval di et al., 2003; Francisco et al., 2012). Other vulnerability factors for disordered eating patterns and body image disturbances in athletes include level of sport participation (with elite athletes being more at risk), sports which use weight categories, overtraining, injuries and unhelpful coaching behaviour (Sundgot-Borgen & Torstveit, 2010; Bratland-Sanda & Sundgot-Borgen, 2013). Research on the impact of conventional forms of media on body image concerns and disordered eating in athletes has demonstrated similar results to that of the general population and dancers. For example, exposure to the thin-ideal through television content and fashion magazines significantly predicted disordered eating in female athletes (Bissell, 2004).

There is less research investigating the impact of newer forms of media on athletes' mental health. Disadvantages of Twitter use for student athletes have been highlighted (e.g. receiving critical messages and detrimental implications for sport performance), as well as advantages (e.g. acting as an avenue for advocacy and moral support and promoting team cohesion; David et al., 2018). However, the impact on aspects such as body surveillance, self-objectification, disordered eating and depressed mood in athletes has not been explored. Some research has looked at the use of social media by athletes. This suggested that athletes (engaging in basketball, football, tennis, athletics, golf, swimming, diving, gymnastics and baseball) use Instagram and other social media platforms such as Twitter, as a method of self-presentation and impression management (Smith & Sanderson, 2015; Geurin-Eagleman & Burch, 2016; Lee & Pederson, 2018). Interestingly, gender differences have been shown to exist in athlete's self-presentation on social media platforms, with women tending to post more casual, non-sport related profile photographs and men posting more athletic/sport-based profile photographs (Coche,

2014; Lee & Pederson, 2018). It would be of interest to see whether dancers also use social media for self-presentation.

One way those who exercise or do sport may use social media is through engagement with fitspiration content. Fitspiration has been defined as an online trend intended to promote healthy fitness through exercise and diet-related images and text (Tiggemann & Zaccardo, 2015; Boepple, Ata, Rum & Thompson, 2016). Fitspiration content has been found to focus on appearance-related ideals which emphasise low body weight, encourage restrictive eating and increase the severity of symptoms in those with eating disorders (Talbot, Gavin, van Steen & Morey, 2017; Alberga, Withnell & von Ranson, 2018; Griffiths et al., 2018). These posts promote exercise as a way of achieving body ideals, encourage self-objectification and associate physical fitness with attractiveness rather than health (Deighton-Smith & Bell, 2018). Those who are more motivated to exercise have been found to engage in more social comparison of fitspiration images and those who followed more fitspiration content on social media reported intentions to engage in extreme weight-loss behaviours (Lewallen & Behm-Morawitz, 2016). A study found that females who posted fitspiration images on Instagram scored significantly higher on drive for thinness, bulimia, drive for muscularity and compulsive exercise compared to females who posted travel images on Instagram (Holland & Tiggemann, 2017).

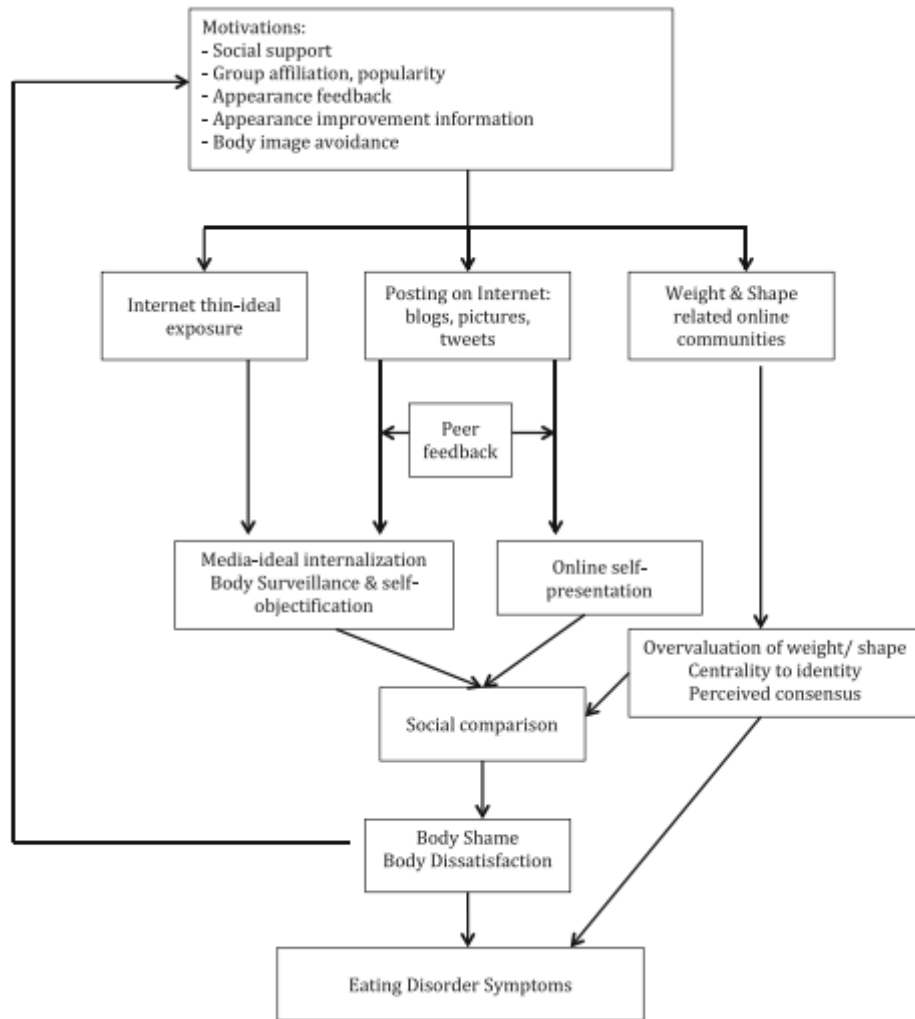
However, recent research has indicated that the relationship between fitspiration messages on social media and body image concerns is dependent on a complex interaction of individual characteristics of the consumer and the exact content of fitspiration posts (Sumter, Cingel & Antonis, 2018). This study found fitspiration media was more appealing to women who had internalised the fit or thin-ideal and exposure to these messages was related to body dissatisfaction in those with higher thin-ideal internalisation. Additionally, exposure to fitspiration posts based on weight loss and fitness were more positively related to body dissatisfaction and compulsive exercise than fitspiration posts focused on healthy eating and mental wellbeing. Findings also demonstrated that content can be inspiring for some women and provide support to achieve their ideal body, particularly fitspiration posts related to fitness and healthy eating (Sumter et al., 2018). This shows the importance of exploring individual characteristics and the content of social media when

investigating the impact of social media on young people's (including dancer's and athlete's) mental health.

### **Models of social media use, body image concerns and disordered eating**

Systemic reviews have demonstrated a relationship between social media use, body image and disordered eating in the general population (Holland & Tiggemann, 2016; Rodgers & Melioli, 2016). In particular, the use of appearance-focused social media platforms has been associated with heightened body image and eating concerns (Rodgers & Melioli, 2016). The rest of this literature review will introduce two models of social media use and body image concerns, which also consider factors such as disordered eating and depressed mood (Rodgers, 2016; Perloff, 2014). Key factors from these models will then be discussed in turn.

Rodgers (2016) puts forward a model (Figure 2) which integrates sociocultural, feminist, self-objectification, impression management, social identity and gratification theory to explain the relationship between social media use, body image concerns and eating pathology in the general population. This model is proposed as a framework within which to ground research in this area. It proposes several possible mediators including: media-ideal internalisation, body surveillance, self-objectification and social comparison, as well as several possible moderators including: age, gender, self-esteem, motivations for social media use, social support, need for belonging and appearance-related feedback. This framework suggests that the most frequent and pervasive use of social media for body dissatisfaction is likely to be that in which users present themselves online and receive feedback from others that shapes their online presentation. Rodgers (2016) proposes that this is likely to cause a discrepancy between real and online self, which alongside social comparison may lead to behaviours to try and bring the two "selves" in line (e.g. via dieting or plastic surgery). Rodgers (2016) suggests future research should explore whether certain ways of using social media including interactive aspects and the creation of an online persona confer greater risk for increased body image and eating concerns.



**Figure 2. Rodgers (2016) integrated model of the influence of the internet on body image concerns and eating pathology.**

Perloff (2014) developed a transactional model in which the influences of social media on body image concerns are complex, bidirectional and dependent on an individual's vulnerability factors and needs. The model applies the uses and gratifications approach to explain why some individuals may be more vulnerable to body image concerns. This approach will be discussed in more detail in the following section. Perloff's model suggests that more vulnerable individuals will seek different gratifications from social media, such as psychological appearance-gratifying needs. When these needs are not met then negative psychological effects may occur, such as negative affect and body image concerns. Perloff (2014) highlights that this may lead to eating concerns, as body dissatisfaction is one of the



most robust risk and maintenance factors for eating disorders (Stice & Shaw, 2002). Another element of Perloff's model is that the unique features of social media may influence its impact on body image concerns compared to conventional forms of media. For example, increased interactivity, accessibility and user contribution. It is noteworthy that Perloff's model is based on females only. However, research has found no differences across gender for body image concerns and disordered eating following social media use (Santarossa & Woodruff, 2017). Therefore, the current research project explored social media use across gender.

### **Uses and gratifications theory**

It is important to understand why individuals are motivated to use social media and the function of different social media platforms for their users. Uses and gratifications theory (U&G; Katz, Blumler & Gurevitch, 1973) suggests media use is driven by valued outcomes i.e. gratifications. The model has been applied more recently to understand social media use and views users of social media as those with an active role, rather than as a passive audience. Therefore, it proposes that individuals seek out and generate content on social media to meet their needs. Based on the U&G approach, researchers have begun to identify motivations for using social media. Mäntymäki and Islam (2016) found two key psychological needs that drive social media use. The first is self-presentation, which they found to be fulfilled by the gratification of exhibitionism. This describes narcissistic self-promotion on social media and is more commonly seen in a younger population. The second driver they proposed was the need to belong, fulfilled by the gratifications of interpersonal connectivity and voyeurism (the tendency to derive psychological value by accessing the private details of others).

Alhabash and Ma (2017) moved beyond this and suggested that the function and usability of a particular social media platform will result in a unique set of motivations and gratifications. They found that Instagram led on the motivation for self-expression, which has been emphasised in the research, as well as using Instagram to seek out and gain knowledge about others (Lee, Lee, Moon & Sung, 2015; Ting, Wong, De Run & Lau, 2015; Sheldon & Bryant, 2016). Drawing on Erikson's identity theory (Erikson, 1950, 1963) lends support to these two motivations (self-presentation and surveillance/knowledge gathering) for Instagram

use in young people. During this time there is a search for a sense of self and personal identity through exploration and social comparison, as well as a move towards sharing ourselves more intimately. These developmental needs may be gratified through social media use, such as posting content as a way of trying on different selves and making social comparisons by viewing other's profiles for prolonged periods without the social implications this would have offline (Coyne et al., 2013; Singleton, Abeles & Smith, 2016; Santarossa & Woodruff, 2017). Developmental characteristics which are salient in adolescence and early adulthood, including identity and self-worth are also relevant in the context of body image and eating concerns (Rodgers & Melioli, 2016).

### **Self-presentation**

Goffman's (1959) theory of self-presentation states that individuals wish to control the impressions others form of them and do so by carefully selecting and disclosing information consistent with the image trying to be portrayed. Social media platforms have created novel opportunities for online self-presentation, where individuals can build and control an online "ideal" version of themselves (Kaplan & Haenlein, 2010; de Vaate, Veldhuis, Alleva, Konijn & van Hugten, 2018). This is particularly salient on image-based platforms such as Instagram, in which visual images can be used to build identities (Kim, Seely & Jung, 2017). Hu, Manikonda and Kambhampati (2014) found that the most popular type of photographs posted on Instagram were self-portraits/images or "selfies", which is in line with the idea that Instagram is often used for self-promoting. Research has shown that women link selfie posting to identity management and try to portray an image that is close to the "ideal" as possible (Grogan, Rothery, Cole & Hall, 2018).

Particular features on Instagram are conducive to self-expression and presentation of an ideal self. For example, the site allows users to gain validation of their self-presentation through likes and comments and edit and modify their photographs using different filters (Lup, Trub & Rosenthal, 2015; Dumas, Maxwell-Smith, Davis & Giulietti, 2017). One study showed that young people spent up to 10 minutes editing selfies per day (de Vaate et al., 2018). Young women reported that editing of photographs is guided by media and peer standards of beauty and underpinned by low self-esteem and the need for peer recognition (Chua & Chang, 2016). An

experimental study found that women who posted selfies on social media reported feeling more anxious, less confident and less physically attractive after posting a selfie compared to a control group, even when they were able to retake or retouch the image (Mills, Musto, Williams & Tiggemann, 2018). This highlights that even after managing one's identity through editing, selfie posting can result in adverse psychological effects and these feelings may be related to fear of negative evaluation by others.

Impression management may result in psychological difficulties when there is a discrepancy or cognitive incongruence between actual self and the ideal, edited self which is presented on social media (as mentioned in Rodgers, 2016 model). Self-schema (Markus, 1977) and self-discrepancy (Higgins, 1987) theory suggest that individuals who place a lot of importance on their appearance may be more likely to experience a discrepancy between their actual and ideal self and this may lead to negative emotions and body image concerns. A limitation of impression management theories is that they do not describe the psychological processes or individual differences which account for the existence of discrepancies between online and offline presentations. Some research has found that appearance self-schema and self-discrepancy mediates the effect of Instagram use on body satisfaction, dependent on an individual's level of self-esteem (Ahadzadeh, Sharif & Ong, 2017). Evidence highlights the importance of not deviating too much from one's actual self or presenting an unrealistic ideal self on social media. This may result in undesirable consequences such as being perceived as deceitful and dishonest (DeAndrea & Walther, 2011; Uski & Lampinen, 2016).

It is important to consider the development of photography when considering self-presentation on Instagram. Photographs have become a means of self-presentation, rather than a way to remember and collect memories (Mendelson & Papacharissi, 2010). Modern photography is much more instant compared to previously when photographs had to be printed before they were viewed (Murray, 2008). This allows the individual to have much more control over their photographs and take a larger number of shots that can be easily edited and disseminated using smartphones (Lasén & Gómez-Cruz, 2009). The advent of front-facing cameras on smartphones also allows individuals to take selfies more easily, allowing complete control over

how one looks in a photograph and contributing to self-expression and promotion of one's identity (Gye, 2007; Lasén & Gómez-Cruz, 2009; Iqani & Schroeder, 2016). It is important to note that photography practices and what they enable individuals to do will continue to transform. However, the themes around self-presentation and photography and the relationship with psychological constructs are likely to still be relevant.

### **Appearance-focused surveillance and knowledge gathering**

Surveillance and knowledge gathering were found to be the strongest predictor of Instagram use by Lee et al., (2015) and Sheldon and Bryant (2016). This has implications for individuals who are more appearance-focused, as they are likely to use social media to seek out and expose themselves to appearance-based messages and feedback online. Viewing idealised and edited photographs of others on social media may result in adverse effects. However, when females know that images have been digitally modified or altered on Instagram they are less likely to internalise the thin ideal (Vendemia & DeAndrea, 2018). This suggests an awareness of photo editing and manipulation on social media could potentially mitigate against the adverse effects of viewing idealised images of others. Exposure to appearance-related comments on Instagram photos has also been shown to result in adverse effects, including greater body dissatisfaction than exposure to the same photos with location-related comments (Tiggemann & Barbato, 2018). This demonstrates that it is not just browsing Instagram images that can result in body image concerns, but also focusing on written appearance-related content (i.e. comments) that can be potentially harmful.

The relationships between frequency of Instagram use with depressive symptoms, self-esteem, appearance anxiety and body dissatisfaction have been found to be mediated by social comparison (Lup et al., 2015, Sherlock & Wagstaff, 2018). Appearance-based comparisons of both peers (Holland & Tiggemann, 2016; Hendrickse, Arpan, Clayton & Ridgway, 2017) and celebrity images on Instagram (Brown & Tiggemann, 2016) and on Facebook (Fardouly & Vartanian, 2015) have been found to mediate the relationship between social media use, drive for thinness and body image concerns and online physical appearance comparisons on Facebook are associated with greater disordered eating (Walker et al., 2015).

Social comparison is implicated in a sociocultural model of disordered eating (Fitzsimmons-Craft et al., 2014). Sociocultural theory posits that social agents including the media, peers and parents convey messages about appearance and body ideals which are then internalised (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. Washington, DC, US: American Psychological Association.). The impact of this sociocultural influence on body image and eating concerns is thought to be mediated by appearance comparisons (Brown & Bobkowski, 2011). Therefore, social media platforms may be harmful for those who find themselves comparing their appearance to others (Saunders & Eaton, 2018). Interestingly, when individuals did not use Facebook to make appearance comparisons, increased Facebook intensity was associated with decreased disordered eating behaviours (Walker et al., 2015).

Social comparison theory (Festinger, 1954) says that people have an innate drive to use social information to compare themselves to others. This allows them to determine their standing on various aspects, including physical attractiveness. There are vast amounts of social information available on social media and therefore countless opportunities for individuals to survey and gather knowledge which allows them to make appearance comparisons (Sherlock & Wagstaff, 2018). This is of particular relevance on Instagram, as its primary use is to post and share images and users can view and receive appearance-related comments (Fardouly, Willburger & Vartanian, 2017). Exposure to the idealised and edited images of others on social media may result in upward comparisons. These describe the process in which individuals judge themselves to be worse off than others (Festinger, 1954). Young people with existing mental health difficulties were found to predominantly make upward social comparisons on social media and described feelings of insecurity, anxiety and low mood (Singleton et al., 2016). Upward comparisons may also result in people viewing themselves as less attractive than other social media users, resulting in greater body dissatisfaction (Fardouly et al., 2017; Tiggemann, Hayden, Brown & Veldhuis, 2018) and disordered eating (Saunders & Eaton, 2018).

As well as upward comparisons, individuals can also make downward comparisons, in which they deem themselves as better off than others (Festinger, 1954). A greater

degree of upward than downward social comparisons have been reported on social media (Vogel, Rose, Roberts & Eckles, 2014) and upward appearance comparisons and internalisation of the beauty ideal have been found to mediate the associations between Instagram use, self-objectification and body surveillance (Feltman & Szymanski, 2018). However, having a greater tendency to compare one's appearance to others in general (regardless of whether these are upwards or downwards comparisons) is thought to be associated with appearance dissatisfaction (Fardouly, Diedrichs, Vartanian & Halliwell, 2015), body image concerns (Kleemans, Daalmans, Carbaat & Anschütz, 2016) and lower positive affect (de Vries, Möller, Wieringa, Eigenraam & Hamelink, 2017). A limitation of the sociocultural theory is that it does not consider the effect of creating appearance-focused content, as described in the literature above on self-presentation.

### **Self-objectification**

Self-objectification theory may be used to explain self-presentation and appearance comparison tendencies. Self-objectification theory (Fredrickson & Roberts, 1997), as previously discussed, states that individuals treat their bodies as an object to be viewed and evaluated based on their appearance. This may lead to difficulties with body image due to increased body-related anxiety, body shame and body surveillance (Rodgers, 2016). Body surveillance is the behavioural manifestation of self-objectification that involves habitual self-monitoring of one's external appearance (Moradi & Huang, 2008). Depressed mood and disordered eating have been predicted by body surveillance and self-objectification (Tiggemann & Kuring, 2004; Peat & Muehlenkamp, 2011). Visual social media platforms are a space for online identities and appearances to be judged and evaluated by others, much like objects. Exposure to sexual objectification on social media was found to be related to internalisation of beauty ideals and body surveillance (Vandenbosch & Eggermont, 2012). Furthermore, Facebook involvement was found to predict objectified body consciousness, which in turn predicted greater body shame (Manago, Ward, Lemm, Reed & Seabrook, 2015).

Self-objectification has been linked to self-presentation on social media, particularly with regards to selfie posting. Bell, Cassarly and Dunbar (2018) found a higher frequency of posting objectified selfies on Instagram, was associated with trait self-

objectification. Receiving more positive feedback represented through “likes” on objectified selfies was also associated with a higher frequency of posting objectified selfies. According to self-presentation theory (Baumeister, 1982) individuals aim to convey their ideal self and please the audience. Therefore, portraying the self in objectified ways on social media may fulfil these motives, as demonstrated by the positive feedback, which may provide further motivation for presenting one’s self in a similar way again. It has been suggested that self-objectification may act as a motive preceding selfie behaviours (Veldhuis, Alleva, Bij de Vaate, Keijer & Konijn, 2018). This idea is linked to the U&G approach, suggesting that those with a higher level of self-objectification may be motivated to post selfies, to receive positive appearance-related feedback and meet their needs. This is supported by research which found that women who report higher investment in selfie feedback (likes and comments) on Instagram, were more likely to express body dissatisfaction through the indirect influence of body surveillance, which is the behavioural manifestation of self-objectification (Butkowski, Dixon & Weeks, 2019).

Appearance-focused surveillance and knowledge gathering by exposure to images of others on social media may also heighten feelings of self-objectification, resulting in subsequent body image concerns. Following exposure to images of attractive others on Instagram, trait self-objectification was found to predict increased body dissatisfaction (Tiggemann & Barbato, 2018). Fardouly et al. (2017) found greater overall Instagram use in young women was associated with greater self-objectification and this relationship was mediated both by the internalisation of the societal beauty ideal and by appearance comparisons to celebrities. In addition, Vandenbosch and Eggermont (2016) found those who internalise appearance standards from the mass media are more susceptible to developing an objectified self-concept through appearance-focused activity on social media, namely searching for and monitoring attractive peers. This development of an objectified self-concept due to using social media to gratify appearance-related needs was found in both males and females.

### **Active vs. passive use of social media**

Both self-presentation and appearance-focused surveillance/knowledge gathering describe active forms of social media use. Prieler and Choi (2014) extended

Perloff's (2014) model by differentiating between active and passive use of social media. Passive use describes being exposed to content on social media, whereas active use involves interaction and generation of content. It has been suggested that patterns of social media use vary across individuals, with some more likely to be active contributors and other more passive users (Alarcón-del-Amo, Lorenzo-Romero & Gómez-Borja, 2011). Kim and Chock (2015) found the amount of time spent on social media (passive consumption) was not related to body image concerns, however particular behaviours such as viewing and commenting on other's profiles was significantly correlated with drive for thinness and this was mediated by appearance comparisons.

The idea that active use may be linked to more body-related concerns is supported by experimental research. This demonstrated that young women who actively viewed and commented on the social media profiles of attractive female peers, subsequently experienced an increase in their own negative body image, although the effect sizes in this research were small (Hogue & Mills, 2019). Other active use including sharing and manipulating selfies and removing "unflattering" photographs have been linked to greater body dissatisfaction, self-objectification, body surveillance and disordered eating (Smith, Hames & Joiner, 2013; Mabe, Forney & Keel, 2014; Meier & Gray, 2014; McLean, Paxton, Wertheim & Masters, 2015; Cohen, Newton-John & Slater, 2017).

These findings suggest that active participation in appearance-focused activities on social media, particularly in relation to self-presentation, seeking out appearance-related content and making appearance comparisons can be problematic. Therefore, a critical methodological focus should be improving the assessment of social media use. Questions regarding the amount of time spent engaging with the media appear less relevant for young people who are often permanently connected to online social media platforms through mobile devices (Rodgers & Melioli, 2016). Therefore, although further research is called for on intensity of social media use and its related outcomes (Allen, Ryan, Gray, McInerney & Waters, 2014), there needs to be a move beyond this, to studying patterns of social media use (including active engagement in specific activities and motivations for use) which might be more strongly related to body image and eating concerns (Rodgers & Melioli, 2016). Previous contradictory findings regarding the relationship between body image, eating-related



concerns and social media use may have been due to the homogenous conceptualisation of social media use rather than measuring specific activities (Cohen, Newton-John & Slater, 2018).

### **Positive effects of social media use**

Social media offers a range of benefits, resources and opportunities for young people. Its use has been associated with increased self-esteem, positive self-expression, identity exploration and increased social connections and support (Brown & Bobkowski, 2011; Quinn & Oldmeadow, 2013; Best, Manktelow & Taylor, 2014; Royal Society for Public Health and Young Health Movement, 2017). Positive use of social media for young people with existing mental health difficulties have also been reported. These include searching for positive content for entertainment and distraction, gaining validation and normalisation of emotional experiences, increased connections and seeking mental health support online (Singleton et al., 2016; Frith, 2017; Radovic, Gmelin, Stein & Miller, 2017). Specific types of social media platforms have also been linked to benefits for young people. For example, the use of image-based social media platforms has been proposed to reduce loneliness and increase happiness, due to the intimacy offered through images, which conjure up more emotional-connection than posts containing just text (Pittman & Reich, 2016).

Social media platforms have the capacity to reach many people in a short time-span compared to other forms of media. This may offer opportunities for online activism and social change, which moves away from the focus on unhealthy body stereotypes and towards body acceptance and a positive body image (Rodgers & Melioli, 2016). Body positive content challenges mainstream beauty ideals and encourages the acceptance and appreciation of all body shapes. A content analysis of body positive posts on Instagram found these were mostly positive in tone and inspirational with a common focus on body size and image (Kelly & Daneshjoo, 2019). Brief exposure to body positive Instagram posts has been found to be associated with improvements in young women's positive mood, body satisfaction and body appreciation (Cohen, Fardouly, Newton-Smith & Slater, 2018), although there was no investigation into how long these effects lasted.

Brief exposure to body positive Instagram posts has also been associated with an increase in self-objectification, highlighting that there is still a focus on objectifying appearance in more positive social media content (Cohen et al., 2018). Despite this, social media may be conceived as a positive outlet for self-expression through participation in the body positive movement. It has been argued there should be encouragement to follow and seek out more body positive content on social media platforms, as this may be a practical and cost-effective way to provide a broader conceptualisation of beauty and foster body appreciation and a positive body image (Cohen et al., 2018).

### **Translating research into practice and policy**

Achieving an appropriate balance between the positive and negative impacts of social media use seems imperative within the current culture, in which it appears unavoidable for most young people (Singleton et al., 2016). An increased understanding of helpful versus harmful social media use may be used by clinicians, teachers and parents to provide young people and dancers with guidance about social media use (Radovic et al., 2017). Due to social media platforms being a fairly recent development, there is no accumulated intergenerational knowledge to be passed down on how to best negotiate social media platforms (Rodgers & Melioli, 2016). Therefore, there is a need to accelerate the translation of research findings in this area into practice and policy. Findings may be used to develop social media literacy programmes, which aim to enhance critical thinking and analysis of social media (Andsager, 2014; McLean, Paxton & Wertheim, 2016). Evidence has begun to emerge supporting the implementation of social media literacy interventions for reducing risk factors for eating disorders, including body image concerns and disordered eating (McLean, Wertheim, Masters & Paxton, 2017). Although, these require further investigation in larger randomised controlled trials with follow-up.

### **Summary**

The literature on social media and associations with mental health in young people is continuing to grow. However, this has yet to be studied within a dance population, in which there may be a higher risk of body image concerns, eating pathology and self-objectification. Bearing in mind the theory and research on social media and factors such as self-objectification, disordered eating and depressed mood in the

general population, it would be interesting to investigate whether the same findings exist in a dance population and whether dancers use social media in the same way as the general population. Furthermore, it will be helpful to continue to understand motivations for social media use and see whether these are replicated in a dance population. Another important area of exploration is looking at social media use and psychological vulnerabilities across gender, as the literature presented above tends to focus on females' social media use and vulnerability to psychological difficulties. Building on research in this area will have practical and clinical implications including an increased understanding for providing guidance on social media use to young people and dance schools and for contributing to the development of social media literacy programmes as preventative mental health interventions. Based on this, the current research aims to address the following research questions:

1. Do dancers and non-dancers engage with social media (in particular Instagram) differently; and do these patterns differ between males and females?
2. Do dancers and non-dancers differ in terms of their own self-objectification, body surveillance, disordered eating and depressed mood; and are there differences between males and females?
3. Do the above psychological variables relate to motivations for Instagram use and Instagram activity in dancers and non-dancers?

## **Method**

### **Design**

This cross-sectional study compared the responses of dancers and non-dancers in an online survey.

### **Participants**

Eighty-five dancers aged 14 to 26 ( $M=17.3$  years,  $SD=3.5$ ) were recruited, of which 62 (73%) were female and 64 (75%) were white British. Ninety-one non-dancers aged 14 to 26 ( $M=17.8$  years,  $SD=2.9$ ) were recruited from a university and three sixth form/secondary schools in the north of England. Of these 46 (51 %) were female and 61 (67 %) were white British. A sample of 14 to 26 year olds were recruited as research has demonstrated that these make up the largest group of social media users and increased social media use is being recognised within this age range (Royal Society for Public Health and Young Health Movement, 2017; Ditch the Label, 2017; Frith, 2017). It was recognised that some of the non-dance sample may have engaged in dance and other sports and therefore information on this was sought. A full table of participant characteristics can be found in Table 2. No statistical determination of sample size was conducted as this was a descriptive study. However, the sample size is comparable to other descriptive studies on Instagram use (e.g. Dumas et al., 2017; 198 participants).

Between May 2018 and February 2019, eleven dance schools and seven educational establishments in the North of England were contacted regarding the project, of which seven (four dance schools and three educational establishments) agreed to participate. A representative from each dance school or educational establishment was contacted and acted as the key contact person, assisting in the recruitment of participants. They sent out an invitation email with a link to the online information sheet, consent form and survey to eligible participants. A reminder email was sent to gatekeepers to distribute, to ensure the intended number of participants were involved in the study. An incentive of a £1.00 charity donation to the Northern School of Contemporary Dance hardship fund and the Academy of Northern Ballet bursary fund was given for each completed survey.

For participants under the age of 16, a parental consent form was sent out via the key contact people outlining what the study was for and what their child would be asked to do. Parents were provided with an “opt out” option for their child with a deadline. The principle of Gillick competence (Gillick, 1986) was applied for consent to participate in the research and therefore parents did not need to consent themselves. Ethical approval was received on 3<sup>rd</sup> May 2018 from the University of Leeds School of Medicine Research Ethics Committee (Ref: MREC17-049). Please see Appendix 1 for a copy of the ethical approval letter.

## **Measures**

There were two versions of an online survey for the two groups. These differed slightly in their questions regarding dance training and experience (Appendix 2 and 3). At the beginning of the survey, demographic information was collected regarding age, gender, ethnicity, level and genre of dance participation (if applicable) and participation in higher level sports or athletics. The categories for genre of dance were created in collaboration with the involved dance schools and are as follows;

- 1) Ballet, defined as a highly technical form of dance with numerous strands which focus on aesthetic appearance, fluidity and gracefulness, elegant clean lines, strength and flexibility (Clarke & Crisp, 1992).
- 2) Contemporary, defined as a dance style which incorporates elements of many types of dance and combines strong legwork with stresses on the torso (Scheff, Sprague, & McGreevy-Nichols, 2010). Contemporary dance has been described as a dance to be danced rather than analysed, where dancers are selected based on skill and training (Contemporary Dance Org, 2019).
- 3) Urban, defined as a style which encompasses various dance types influenced by rhythms and techniques of funk and hip-hop music (Your Dictionary, 2019). This dance style tends to be more athletically focused (Swami & Tovée, 2009).
- 4) Commercial, defined as a type of dance which includes a myriad of styles, it is the type of dance typically seen in the media including music videos, on the catwalk and in advertising campaigns, where this is often a focus on sexual objectification (Schupp, 2014).

5) Ballroom, defined typically as a partner dance with an emphasis on performance and entertainment and core elements of control and cohesiveness (Scheff et al., 2010).

6) Other

Simple social media characteristics were also collected, including number of followers/accounts following on Instagram, availability of Instagram profile (public or private) and how frequently other social media platforms were used, which was measured using a five-point rating scale (*0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Very Often*). Subsequently, the following assessments were included:

#### *Instagram use*

Two questions measuring Instagram use were adapted from Fardouly and Vartanian (2015). These asked about Instagram rather than Facebook. The first item related to ‘frequency’ of Instagram checking; “On a typical day, how often do you check Instagram”. This was measured using a seven-point rating scale (*1 = Not at all, 2 = Once a day, 3 = Every few hours, 4 = Every hour, 5 = Every 30 minutes, 6 = Every 10 minutes, 7 = Every 2 minutes*). The second item related to ‘duration’ of use; “Overall, how long do you spend on Instagram on a typical day?”. This was measured using a nine-point rating scale (*1 = 5 minutes or less, 2 = 15 minutes, 3 = 30 minutes, 4 = 1 hour, 5 = 2 hours, 6 = 4 hours, 7 = 6 hours, 8 = 8 hours, 9 = 10 hours or more*).

Eighteen items measuring motivations for using Instagram were taken from Alhabash and Ma (2017). These ask respondents to express their agreement on a seven-point rating scale (*1 = Strongly disagree, 2 = Disagree, 3 = Disagree somewhat, 4 = Neither agree nor disagree, 5 = Agree somewhat, 6 = Agree, 7 = Strongly agree*). The authors (Alhabash & Ma, 2017) conducted factor analysis and collapsed these 18 items into seven overarching motivations. This multi-item construct was used in the current research project and is displayed in Table 1.

Five additional items assessing Instagram activity were taken from the literature. Three measured self-presentation (“Take photograph/video for the main purpose of posting it on Instagram”, “Upload self-photographs/videos to Instagram” and “Edit

self-photographs before posting them on Instagram (including using filters, cropping or cutting parts of yourself out of photographs and using Photoshop or other photo editing software or applications”) and two measured appearance-focused surveillance and knowledge gathering (“Look at photographs of others on Instagram [e.g. using explore, checking out pages and viewing images of others more generally]” and “Compare self-photographs to photographs of others on Instagram”). These asked how often participants use Instagram for the given activity as seen in Sheldon and Bryant (2016) and are measured on a five-point scale (*1= Never, 2= Rarely, 3= Sometimes, 4= Often, 5= Very Often*), as used in similar social media questionnaires (Meier & Gray, 2014; Mäntymäki & Islam, 2016).

### *Self-objectification*

The Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998) is a ten-item rank order measure used to assess the extent to which individuals perceive their bodies in observable, appearance-based (objectified) terms versus non-observable, competence-based (non-objectified) terms. Respondents ranked a list of body attributes in ascending order of how important each is to their physical self-concept, from that which has the most impact (*rank = 10*) to the least impact (*rank = 1*). The SOQ is made up of five appearance-based items (weight, sex-appeal, physical attractiveness, firm/ sculpted muscles and body measurements) and five competence-based items (physical coordination, health, strength, energy level and physical fitness level). Scores range from -25 to 25, with a higher score indicating a higher level of self-objectification. Given the scoring system and ordinal nature of the SOQ, traditional internal consistency estimates cannot be provided (Vanleeuwen & Mandabach, 2002). However, a strong negative correlation has been demonstrated between the sum of rankings for appearance-based items and the sum of rankings for competence-based items ( $r = -.81$ ; Hill & Fischer, 2008).

### *Body surveillance*

The Objectified Body Conscious Scale (OBCS; McKinley & Hyde, 1996) is a 24-item measure comprising three eight-item subscales, one of which is the eight-item body surveillance scale (BSS) which was used in this research. Body surveillance refers to the habitual monitoring of one’s body from an observer’s perspective and compared against the internalised cultural ideal.

**Table 1. Motivations for Instagram use taken from Alhabash and Ma (2017).**

<b>Item</b>	<b>Motivation</b>
Item 1: To share information	Information sharing
Item 2: To share information useful to people	
Item 3: To present information on my interest/s	
Item 4: To record what I do in life	Self-documentation
Item 5: To record what I have learned	
Item 6: To record where I have been	
Item 7: To connect with people who share some of my values	Social interaction
Item 8: To connect with people who are similar to me	
Item 9: To meet new people	
Item 10: To entertain myself	Entertainment
Item 11: Because it is enjoyable	
Item 12: Because it helps pass the time	Passing time
Item 13: Because I have nothing better to do	
Item 14: Because it relaxes me	
Item 15: To show my personality	Self-expression
Item 16: To tell others about myself	
Item 17: Because it is easy to use	Convenience
Item 18: Because it is convenient	



The eight-item scale has items such as “I often worry about whether the clothes I am wearing make me feel good”. Participants reported their agreement with items on a seven-point scale (*1 = Strongly disagree, 2 = Disagree, 3 = Disagree somewhat, 4 = Neither agree nor disagree, 5 = Agree somewhat, 6 = Agree, 7 = Strongly agree*). A higher total score indicates higher levels of body surveillance. The scale has demonstrated good internal consistency as Cronbach alphas for original and abbreviated versions of the OBCS subscales all exceeded .70 (Mckinley & Hyde, 1996). The body surveillance scale of the OBCS has also evidenced good convergent validity with the body shame subscale of the OBCS, the Body Esteem Scale and the Internalisation General subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (Moradi & Varnes, 2017).

#### *Disordered eating*

The Eating Disorder Examination Questionnaire Short Form (EDE-QS; Gideon et al., 2016) is a 12-item questionnaire that measures eating disorder psychopathology. It is a brief version of the 28-item version of the EDE-Q (Fairburn & Cooper, 1993). The 12-item scale has items such as “Have you been deliberately trying to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded)”. Each item has a four-point rating scale referring to the past week (*0 = 0 days, 1 = 1-2 days, 2 = 3-5 days and 3 = 6-7 days*). Scores range from 0 to 36, with a higher score indicating a higher level of disordered eating. The measure has demonstrated high internal consistency (Cronbach  $\alpha = .913$ ) and good convergent validity with the original longer version EDE-Q ( $r = .91$  for people without eating disorders;  $r = .82$  for people with eating disorders) and other measures of eating disorder psychopathology. It also showed sufficient sensitivity to distinguishing between those with and without eating disorders (Gideon et al., 2016).

#### *Depressed mood*

The Patient Health Questionnaire- Short Form (PHQ-2; Kroenke, Spitzer & Williams, 2003) is a two-item questionnaire, with one item enquiring about frequency of depressed mood (feeling down, depressed, or hopeless) and one item enquiring about the frequency of anhedonia (little interest or pleasure in doing things) over the past two weeks. It is a brief version of the nine-item version (PHQ-9). Items are measured on a four-point rating scale referring to the past fortnight (*0 =*

*Not at all* 1 = *Several days*, 2 = *More than half the days* and 3 = *Nearly every day*). Scores range from 0 to 6, with a score of 3 or higher indicating major depressive disorder. It has been shown to demonstrate good construct and criterion validity (Kroenke et al., 2003) and high internal consistency (Cronbach  $\alpha$  = .83; Löwe, Kroenke & Gräfe, 2005).

### **Procedure**

Participants were asked to individually complete the online survey on [onlinesurvey.ac.uk](https://onlinesurvey.ac.uk) (formerly Bristol Online Survey). This included all of the above measures and took around 10 to 15 minutes to complete. One of the dance schools and secondary schools allocated their students time to complete the survey within their timetable if they wished to do so. Firstly, an online information sheet was shown, that informed participants of the purpose of the study and their right to withdraw up until the point that the survey was submitted online. Participants' consent was obtained through them agreeing to continue with the online survey. Following completion, participants were provided with an online debrief which contained sources of further help and support if needed. Participation was voluntary and all responses were anonymous.

### **Data analysis**

Measures were scored according to their individual manuals. Data were analysed using IBM SPSS Statistics 23, any missing data was defined as missing using the value "99" in SPSS. In total there was two pieces of missing data. All data was tested for normality using observation of histograms and the Kolmogorov-Smirnov test and homogeneity of variance using the Levene's test. This was conducted for the whole sample and separately for dancers and non-dancers. An example of this for duration of Instagram use is included in Appendix 4. When parametric assumptions were not met, both parametric and non-parametric tests were conducted. These tests demonstrated the same pattern of results and therefore the parametric tests were reported as they are a most robust test of difference/association.

Chi-squared tests were applied to categorical data including gender, participation in dance, participation in other sports/athletics, use of Instagram and availability of

Instagram profile. Chi-squared tests could not be conducted for level or genre of dance as assumptions were not met i.e. frequencies were less than five. Two-way independent ANOVAs were conducted with gender and participant type (dancer or non-dancer) as the main factors for frequency of different social media platform use, duration of Instagram use, frequency of Instagram checking, number of Instagram followers, the number of Instagram accounts following, the seven motivations for Instagram and five additional Instagram activities described above, self-objectification, body surveillance, disordered eating and depressed mood. Post-hoc tests were not run as both independent variables had fewer than three levels.

Pearson correlations were used to look at the relationships between Instagram motivation variables, Instagram activity variables, psychological variables and Instagram use variables (duration of Instagram use and frequency of Instagram checking) for the whole sample and females only. The relationships between Instagram motivation and activity variables and psychological variables was also looked at separately for dancers and non-dancers. Multivariable linear regression analysis was conducted to further explore significant associations. Two models were developed, the first to explore potential predictors of duration of Instagram use and the second to explore potential predictors of frequency of Instagram checking. Assumptions for regression were met, including multicollinearity, as none of the variables included in regression correlated very highly ( $r < .80$ ). To account for multiple testing Bonferroni correction was applied and a more stringent value of  $p \leq .01$  was used for the tests of difference and Pearson correlations.

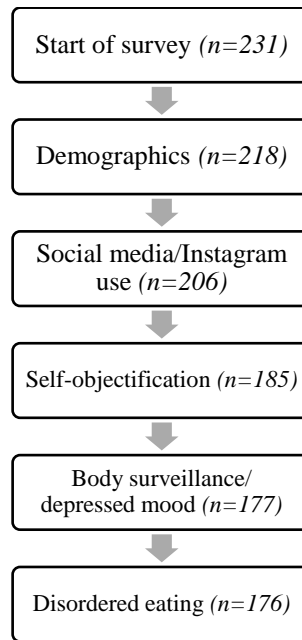
## Results

### Participant characteristics

Over half the sample were female ( $n=108$ , 61.4%; Table 2). Half of the sample participated in dance ( $n=88$ , 50.0%) and around a fifth participated in other sports or athletics ( $n=38$ , 21.6%). The dance sample included a range of dance genres. Nearly two thirds were contemporary dancers ( $n=54$ , 63.5%) and the next most common dance genre was ballet ( $n=15$ , 17.6%). Over three-quarters of the dance sample had participated in dance for more than five years ( $n=66$ , 77.6%). There was a larger proportion of females in the dance sample compared to the non-dance sample ( $\chi^2(1) = 10.00$ ,  $p=.002$ ). As expected, dancers participated in dance more than non-dancers ( $\chi^2(1) = 163.40$ ,  $p \leq .001$ ). Dancers and non-dancers did not differ significantly in their participation in other sports or athletics ( $\chi^2(1) = 0.74$ ,  $p=0.39$ ).

### Social media use

Figure 3 displays participant retention during the online survey. Overall, Instagram was the most frequently used social media platform (Table 3). A mean value of 3.10 corresponds to ‘often’ on the response scale. This was followed by Youtube then Snapchat. Pinterest was the least frequently used social media platform overall. Dancers used Instagram significantly more frequently than non-dancers ( $F(1,176)=9.73$ ,  $p=.002$ ). A significant interaction between the effects of gender and participant type (dancer vs. non-dancer) on frequency of Facebook use was found ( $F(1,176)=23.19$ ,  $p<.001$ ). Specifically, male non-dancers reported the lowest frequency of Facebook use ( $M=1.38$ ) compared to the other three groups (male dancers  $M=2.86$ ; female dancer  $M=2.03$ ; female non-dancers  $M=2.52$ ). There was no significant difference between dancers and non-dancers in the frequency of use of any other social media platform. No gender differences were found for frequency of Instagram use, but females used Pinterest significantly more frequently than males ( $F(1,175)=7.11$ ,  $p=.001$ ). There was no significant difference between males and females in the frequency of use of any other social media platform.



**Figure 3. Participant retention within the online survey.**

### **Instagram use**

Overall, 91.5% of participants used Instagram, with just over half having a private Instagram profile (53.4%). On average, the full sample had more Instagram followers than accounts following. Participants reported spending around 30 minutes per day on Instagram and checking Instagram every hour. The most commonly reported motivation for Instagram use overall was ‘self-documentation’, followed by ‘passing time’ then ‘social interaction’. The least commonly reported motivation for Instagram use overall was ‘self-expression’. On average, the sample ‘rarely’ or ‘never’ engaged in the five self-presentation/appearance-focused surveillance and knowledge gathering activities, except from looking at photographs of others on Instagram, which the sample reported as a value equating to ‘sometimes’ engaging in (Table 4).

Dancers and non-dancers did not differ significantly in whether they currently used Instagram ( $\chi^2(1) = 3.07, p=.08$ ), the availability of their Instagram profile ( $\chi^2(1) = 0.49, p=.49$ ), or number of Instagram followers ( $F(1,161) = 0.80, p=.37$ ). Dancers followed significantly more Instagram accounts than non-dancers ( $F(1,161) = 32.51, p<.001$ ). Please see Table 4.

**Table 2. Participant characteristics.**

	<b>n (%)</b>			$\chi^2$	<i>p</i>
	Dance (N=85)	Non-dance (N=91)	Total (N=176)		
<b>Gender</b>				10.00	.002*
Male	22 (25.9%)	45 (49.5%)	67 (38.1%)		
Female	62 (72.9%)	46 (50.5%)	108 (61.4%)		
Not specified	1 (1.2%)	0 (0.0%)	1 (0.6%)		
<b>Ethnicity</b>					
White British	64 (75.3%)	61 (67.0%)	125 (70.6%)		
White Irish	1 (1.2%)	0 (0.0%)	1 (0.6%)		
White Other	6 (7.1%)	5 (5.5%)	11 (6.2%)		
Mixed Caribb.	2 (2.4%)	0 (0.0%)	2 (1.1%)		
Mixed African	0 (0.0%)	1 (1.1%)	1 (0.6%)		
White/Asian	3 (3.5%)	0 (0.0%)	3 (1.7%)		
Mixed Other	2 (2.4%)	1 (1.1%)	3 (1.7%)		
Asian	4 (4.7%)	9 (9.9%)	13 (7.3%)		
Black	3 (3.5%)	10 (11.0%)	13 (7.3%)		
Other	0 (0.0%)	4 (4.4%)	4 (2.3%)		
<b>Participate in dance</b>				163.40	<.001**
Yes	85 (100.0%)	3 (3.3%)	88 (50.0%)		
No	0 (0.0%)	88 (96.7%)	88 (50.0%)		
<b>Years danced</b>				-	-
>Five years	66 (77.6%)	2 (2.20%)	68 (38.6%)		
Four years	8 (9.4%)	0 (0.0%)	8 (4.5%)		
Three years	4 (4.7%)	0 (0.0%)	4 (2.3%)		
Two years	4 (4.7%)	1 (1.10%)	5 (2.8%)		
One year	2 (2.4%)	0 (0.0%)	2 (1.1%)		
Less than a year	1 (1.2%)	0 (0.0%)	1 (0.6%)		
<b>Genre of dance</b>				-	-
Ballet	15 (17.6%)	1 (1.10%)	16 (9.1%)		

Contemporary	54 (63.5%)	1 (1.10%)	55 (31.3%)		
Urban	6 (7.1%)	1 (1.10%)	7 (4.0%)		
Commercial	4 (4.7%)	0 (0.0%)	4 (2.3%)		
Ballroom	2 (2.4%)	0 (0.0%)	2 (1.1%)		
Other	4 (4.7%)	0 (0.0%)	4 (2.3%)		
<b>Sport/athletics</b>				0.74	.39
Yes	16 (18.8%)	22 (24.2%)	38 (21.6%)		
No	69 (81.2%)	69 (75.8%)	138 (78.4%)		

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*For gender the chi-square test excluded "Not specified" to meet assumptions.*

\*Significant at  $p \leq .01$

\*\*Significant at  $p \leq .001$

**Table 3. Self-reported frequency of social media use by dancers and non-dancers.**

	<b>M (SD)</b>					<b>F (p)</b>	<b>F (p)</b>	<b>F (p)</b>
	Dance (N=85)	Non-dance (N=91)	Females (N=108)	Males (N=67)	Total (N=176)	(Gender)	(PP type)	(Gender x PP type)
Instagram	3.40 (0.98)	2.82 (1.36)	3.32 (1.05)	2.78 (1.38)	3.10 (1.22)	4.31 (.02)	9.73 (.002**)	2.34 (.13)
Facebook	2.24 (1.38)	1.96 (1.32)	2.24 (1.37)	1.87 (1.30)	2.09 (1.35)	0.98 (.38)	5.90 (.02)	23.19 (<.001**)
Twitter	1.21 (1.53)	1.12 (1.31)	1.05 (1.40)	1.31 (1.41)	1.16 (1.42)	3.38 (.04)	1.55 (.22)	11.04 (.02)
Snapchat	3.13 (1.33)	2.64 (1.42)	2.94 (1.35)	2.77 (1.45)	2.88 (1.39)	0.24 (.79)	4.01 (.05)	0.04 (.85)
Youtube	2.75 (1.16)	3.19 (1.12)	2.79 (1.15)	3.25 (1.13)	2.98 (1.16)	2.52 (.08)	4.26 (.04)	0.12 (.73)
Pinterest	0.69 (1.00)	0.56 (0.93)	0.84 (1.45)	0.27 (0.69)	0.62 (0.96)	7.11 (.001**)	0.04 (.85)	0.07 (.80)
Other	0.61 (1.06)	1.04 (1.37)	0.69 (1.10)	1.12 (1.45)	0.87 (1.27)	1.94 (.17)	2.51 (.12)	0.07 (.80)

\*Significant at  $p \leq .01$

\*\*Significant at  $p \leq .001$



In relation to the frequency and duration of Instagram use, there was no significant difference for frequency of Instagram checking ( $F(1,161) = 5.47, p = .02$ ) between dancers and non-dancers. However, dancers spent significantly more time on Instagram than non-dancers ( $F(1,161) = 8.37, p = .004$ ).

Dancers were significantly more motivated than non-dancers to use Instagram for information sharing ( $F(1,161) = 6.49, p = .01$ ), self-documentation ( $F(1,161) = 13.74, p < .001$ ) and self-expression ( $F(1,161) = 23.71, p < .001$ ). There was no difference between dancers and non-dancers' motivation for using Instagram for social interaction ( $F(1,161) = 4.85, p = .03$ ), entertainment ( $F(1,161) = 0.01, p = .91$ ), passing time ( $F(1,161) = 3.27, p = .07$ ) or convenience ( $F(1,161) = 0.93, p = .34$ ).

Significant differences were found for self-presentation/ appearance-focused surveillance and knowledge gathering activities on Instagram. Dancers reported uploading self-photographs/videos to Instagram ( $F(1,161) = 20.43, p < .001$ ), taking a photograph/video for the main purpose of posting it on Instagram ( $F(1,161) = 16.03, p < .001$ ), looking at photographs of others on Instagram ( $F(1,161) = 10.54, p = .001$ ) and editing self-photographs before posting them on Instagram ( $F(1,161) = 6.37, p = .01$ ) significantly more than non-dancers. There was no significant difference between dancers and non-dancers for comparing self-photographs to photographs of others on Instagram ( $F(1,162) = 0.43, p = .52$ ).

A significant interaction between the effects of gender and participant type were found for uploading self-photographs/videos to Instagram ( $F(1,161) = 7.80, p = .006$ ) and looking at photographs of others on Instagram ( $F(1,161) = 8.04, p = .005$ ). Specifically, male non-dancers reported uploading self-photographs/videos less ( $M = 1.00$ ) than the other three groups (male dancers  $M = 2.3$ ; female dancers  $M = 2.12$ ; female non-dancers  $M = 1.81$ ). Similarly, male non-dancers were the group least likely to report looking at photographs of others (male non-dancers  $M = 2.08$ ; female non-dancers  $M = 3.05$ ; female dancers  $M = 3.12$ ; male dancers  $M = 3.10$ ). No significant gender differences were found for any of the other Instagram variables (Table 4).

**Table 4. Characteristics of Instagram use for dancers and non-dancers.**

	<b>n (%)</b>		<b><math>\chi^2</math> (p)</b>			<b>M (SD)</b>				<b>F (p)</b>	<b>F (p)</b>	<b>F (p)</b>
	Dance (N=85)	Non-dance (N=91)	Total (N=176)		Dance (N=85)	Non-dance (N=91)	Females (N=106)	Males (N=67)	Total (N=176)	(Gender)	(Pp type)	(Gender x Pp type)
<b>Use Instagram</b>				3.07 (.08)								
Yes	81 (95.3%)	80 (87.9%)	161 (91.5%)									
No	4 (4.7%)	11 (12.1%)	15 (8.5%)									
<b>Availability of profile</b>				0.49 (.49)								
Public	34 (40.0%)	27 (29.7%)	61 (34.7%)									
Private	47 (55.3%)	47 (51.6%)	94 (53.4%)									
Don't know	0 (0.0%)	6 (6.6%)	6 (3.4%)									
Not applicable	4 (4.7%)	11 (12.1%)	15 (8.5%)									
<b># Followers</b>					748.9 (425.3)	2629.4 (17689.0)	610.0 (413.6)	3597.9 (20743.3)	1702.8 (12546.4)	0.62 (.54)	0.80 (.37)	0.96 (.33)
<b># Accounts following</b>					844.4 (656.9)	407.4 (381.6)	661.1 (509.0)	575.9 (688.9)	627.0 (582.6)	1.15 (.32)	32.51 ( $<.001^{**}$ )	5.12 (.03)
<b>Duration of Insta use</b>					2.93 (1.54)	2.31 (1.62)	2.75 (1.39)	2.41 (1.92)	2.32 (1.15)	0.98 (.38)	8.37 (.004*)	4.75 (.03)
<b>Freq. of Insta checking</b>					2.44 (0.98)	2.20 (1.31)	2.25 (0.95)	2.45 (1.45)	2.62 (1.60)	1.61 (.20)	5.47 (.02)	5.76 (.02)
<b>Upload photo/video</b>					2.15	1.43	1.99	1.45	1.79	2.32	20.43	7.80

	n (%)			$\chi^2$ (p)	M (SD)			F (p)			F (p)	F (p)
	Dance (N=85)	Non-dance (N=91)	Total (N=176)		Dance (N=85)	Non-dance (N=91)	Females (N=106)	Males (N=67)	Total (N=176)	(Gender)	(Pp type)	(Gender x Pp type)
Take photo/video					(0.99)	(1.16)	(1.03)	(1.23)	(1.13)	(.10)	(<.001**)	(.006*)
					2.02	1.36	1.88	1.38	1.70	1.89	16.03	5.95
Edit photos					(1.08)	(1.11)	(1.04)	(1.25)	(1.14)	(.16)	(<.001**)	(.02)
					1.99	1.39	1.94	1.22	1.69	2.95	6.37	3.65
Look at others					(1.40)	(1.40)	(1.38)	(1.40)	(1.42)	(.06)	(.01*)	(.06)
					3.11	2.59	3.09	2.43	2.85	4.34	10.54	8.04
Compare with others					(0.82)	(1.21)	(0.96)	(1.13)	(1.06)	(.02)	(.001**)	(.005*)
					1.80	1.28	1.55	0.97	1.54	0.23	0.43	0.30
Motivation: Info sharing					(1.41)	(1.40)	(1.40)	(1.31)	(1.41)	(.80)	(.52)	(.59)
					9.72	8.10	9.05	8.67	8.91	0.12	6.49	1.48
Motivation: Self- documentation					(3.61)	(5.14)	(4.05)	(5.27)	(4.50)	(.89)	(.01*)	(.23)
					11.91	9.09	11.17	9.31	10.51	1.06	13.74	1.61
Motivation: Social interaction					(3.86)	(5.05)	(4.17)	(5.36)	(4.69)	(.35)	(<.001**)	(.21)
					10.70	9.03	10.04	9.53	9.87	0.05	4.85	0.00
Motivation: Entertainment					(4.00)	(4.69)	(4.17)	(4.88)	(4.42)	(.95)	(.03)	(.99)
					9.51	9.69	9.69	9.43	9.60	0.16	0.01	2.95
Motivation: Passing time					(2.32)	(2.37)	(1.96)	(2.92)	(2.34)	(.85)	(.91)	(.09)
					9.70	11.10	10.24	10.64	10.40	0.30	3.27	0.32
Motivation: Self- expression					(4.19)	(4.18)	(4.07)	(4.54)	(4.23)	(.74)	(.07)	(.58)
					8.32	5.85	7.53	6.31	7.10	0.46	23.71	3.47
Motivation: Convenience					(2.68)	(3.64)	(3.00)	(3.97)	(3.41)	(.63)	(<.001**)	(.06)
					7.77	7.39	7.81	7.17	7.60	0.43	0.93	2.44
					(2.79)	(3.40)	(2.97)	(3.34)	(3.10)	(.65)	(.34)	(.12)

For availability of profile chi-square test excluded “Don’t know” and “Not applicable” to meet assumptions. \*Sig at p ≤.01 \*\* Sig at p ≤.001

### **Psychological variables**

Overall 28% of the sample scored above the clinical cut-off for depressed mood (28% for dancers and 29% for non-dancers). No specific norms are available for the SOQ, BSS or EDE-QS, however 36% of the sample scored in the upper quartile for self-objectification, 23% of the sample scored in the upper quartile for body-surveillance and 2% of the sample scored in the upper quartile for disordered eating.

Dancers scored significantly higher than non-dancers ( $F(1,176)=13.22, p<.001$ ) and females scored significantly higher than males ( $F(1,176)=7.29, p=.001$ ) on the measure of body surveillance. This indicates that both dancers and females reported increased habitual monitoring of their body from an observer's perspective, compared against the internalised cultural ideal. A significant interaction between the effects of gender and participant type on body surveillance was found ( $F(1,176)=7.46, p=.007$ ). Specifically, male-non-dancers reported lower body surveillance ( $M=28.73$ ) than the other three groups (male dancer  $M=36.96$ ; female dancers  $M=38.15$ ; female non-dancers  $M=36.98$ ). There was no significant difference between dancers and non-dancers, or males and females in terms of self-objectification, disordered eating or depressed mood (Table 5).

### **Correlational analysis**

Results from correlational analysis for the whole sample can be found in Table 6. Correlations of primary interest between Instagram motivation/activity variables and psychological variables were run separately for dancers and non-dancers (Table 7). Correlational analysis was also run separately for females (Appendix 5).

#### *Instagram motivation/activity variables and psychological variables*

In relation to the Instagram motivation/activity variables and psychological variables for the whole sample, a significant and positive association was found between body surveillance and taking a photograph/video with the main purpose of posting it to Instagram, uploading self-photographs/videos to Instagram, editing self-photographs before posting them on Instagram, looking at photographs of others on Instagram and comparing self-photographs to photographs of others on Instagram.

**Table 5. Self-objectification, body surveillance, disordered eating and depressed mood for dancers and non-dancers.**

	<b>M (SD)</b>					<b>F (p)</b>	<b>F (p)</b>	<b>F (p)</b>
	Dance	Non-dance	Females	Males	Total	(Gender)	(Pp type)	(Gender x Pp type)
	(N=85)	(N=91)	(N=108)	(N=67)	(N=176)			
Self-objectification	4.91	4.41	5.33	3.84	4.65	1.17	0.11	0.29
	(15.60)	(12.60)	(14.14)	(13.93)	(14.01)	(.31)	(.74)	(.59)
Body surveillance	37.74	32.90	37.65	31.43	35.24	7.29	13.22	7.46
	(7.55)	(9.22)	(7.24)	(9.71)	(8.77)	(.001**)	(<.001**)	(.007*)
Disordered eating	8.91	7.51	9.27	6.51	8.18	2.81	0.43	0.10
	(7.68)	(6.89)	(7.61)	(6.48)	(7.30)	(.06)	(.51)	(.75)
Depressed mood	1.87	1.75	1.85	1.70	1.81	0.70	0.32	1.43
	(1.68)	(1.88)	(1.79)	(1.77)	(1.78)	(.50)	(.57)	(.23)

\*Significant at  $p \leq .01$       \*\*Significant at  $p \leq .001$

**Table 6. Bivariate correlations for Instagram use variables and psychological variables for the whole sample.**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>1. Duration</b>																			
<b>2. Frequency</b>	.63*																		
<b>3. # followers</b>	-.08	-.02																	
<b>4. # following</b>	.32*	.25*	-.02																
<b>5. Info shar.</b>	.26*	.24*	.09	.36*															
<b>6. Self-doc</b>	.20	.21*	-.01	.23*	.54*														
<b>7. Social inter</b>	.20*	.21*	.00	.30*	.59*	.58*													
<b>8. Entertain.</b>	.26*	.32*	-.02	.07	.22*	.17	.38*												
<b>9. Pass time</b>	.31*	.40*	-.04	-.07	.11	.10	.25*	.58*											
<b>10. Self-expr.</b>	.40*	.37*	-.01	.36*	.54*	.71*	.59*	.30*	.18										
<b>11. Convivence</b>	.40*	.37*	-.05	.09	.31*	.28*	.37*	.37*	.42*	.40*									
<b>12. Take photo</b>	.42*	.36*	-.11	.32*	.33*	.51*	.28*	.17	.15	.60*	.30*								
<b>13. Upload</b>	.38*	.24*	-.12	.32*	.29*	.55*	.23*	.06	-.03	.61*	.18	.66*							
<b>14. Edit</b>	.11	.08	-.09	.18	.16	.40*	.13	-.02	-.01	.37*	.04	.46*	.53*						
<b>15. Look other</b>	-.21*	.20*	-.21*	.20	.13	.27*	.19	.18	.14	.33*	.22*	.38*	.31*	.33*					
<b>16. Compare</b>	.19	.13	-.08	.26*	.10	.24*	.18	.07	.13	.32*	.11	.36*	.26*	.41*	.44*				
<b>17. Self-object.</b>	.05	-.06	-.09	-.04	.03	.05	-.04	-.06	-.13	.03	.05	-.07	.04	-.05	.02	-.12			
<b>18. Body surv.</b>	-.06	.00	-.04	.16	-.09	.10	-.03	.03	-.07	.19	-.11	.29*	.21*	.25*	.30*	.54*	-.20		
<b>19. Dis. eating</b>	-.06	-.08	-.09	.12	.04	.04	.09	.03	.02	.06	-.04	.06	-.02	.09	.09	.34*	-.22	.44*	
<b>20. Mood</b>	.01	-.05	-.09	-.02	-.05	-.11	-.01	.10	.22*	-.04	.04	-.06	-.16	-.01	-.03	.19	-.15	.26*	.44*

\*Significant at  $p \leq .01$

**Table 7. Summary of bivariate correlations of primary interest for dancers and non-dancers.**

	<b>Self-objectification</b>		<b>Body surveillance</b>		<b>Disordered eating</b>		<b>Depressed mood</b>	
	Dancers	Non-dancers	Dancers	Non-dancers	Dancers	Non-dancers	Dancers	Non-dancers
<b>Motivation: Info sharing</b>	-.02	.08	-.27	-.06	.00	.04	.01	-.09
<b>Motivation: Self-doc</b>	.06	.07	.08	-.07	.17	-.04	.16	-.34*
<b>Motivation: Social inter.</b>	.05	-.12	-.04	-.11	.01	-.14	-.01	-.01
<b>Motivation: Entertainment</b>	-.11	-.00	-.02	.10	.17	-.06	.07	.12
<b>Motivation: Passing time</b>	-.14	-.14	-.03	-.02	.08	-.02	.22	.23
<b>Motivation: Self-expression</b>	.04	.04	.23	.02	.13	-.04	.18	-.22
<b>Motivation: Convenience</b>	-.09	.19	-.02	-.20	-.01	-.08	.09	-.01
<b>Take photo/video</b>	-.14	.03	.23	.24	-.02	.11	-.02	-.13
<b>Upload photo/video</b>	.03	.07	.17	.11	-.04	-.05	-.02	-.31*
<b>Edit photo</b>	-.03	-.07	.14	.26	.11	.04	.09	-.12
<b>Look at others</b>	-.09	.13	.25	.26	-.01	.15	-.06	-.03
<b>Compare with others</b>	.12	-.15	.06	.57*	-.04	.29*	.01	.09

\*Significant at  $p \leq .01$

Significant and positive associations were also found for disordered eating and comparing self- photographs to photographs of others on Instagram and depressed mood and motivation for passing time for the whole sample. No significant associations were found for any of the other Instagram motivation/activity variables and psychological variables for the whole sample.

When correlational analysis was run separately for females, significant and positive associations were found for taking a photograph/video with the main purpose of posting it to Instagram and body surveillance and depressed mood. Significant negative associations were found between depressed mood and motivation for self-documentation and uploading self-photographs/videos to Instagram.

When correlational analysis was run separately for dancers and non-dancers, no significant associations were found between Instagram motivation/activity variables and psychological variables in the dance sample. However, in the non-dance sample significant positive associations were found between body surveillance and comparing self-photographs to photographs of others on Instagram and disordered eating and comparing self-photographs to photographs of others on Instagram. Significant negative associations were also found between depressed mood and motivation for self-documentation and uploading self-photographs/videos to Instagram within the non-dance sample.

*Instagram use (duration and frequency) and motivation/activity variables*

Duration of Instagram use was significantly and positively associated with motivation for information sharing, social interaction, entertainment, passing time, self-expression and convenience. Duration was also correlated with taking a photograph/video with the main purpose of posting it to Instagram and uploading self-photographs/videos to Instagram, but negatively associated with looking at photographs of others on Instagram for the whole sample.

Frequency of Instagram checking was significantly and positively associated with motivation for information sharing, self-documentation, social interaction, entertainment, passing time, self-expression and convenience. Frequency was also correlated with taking a photograph/video with the main purpose of posting it to



Instagram, uploading self-photographs/videos to Instagram and looking at photographs of others on Instagram for the whole sample. When correlational analysis was run separately for females similar patterns of association were observed to the full sample.

### **Regression analysis**

#### *Model one: Predictors of duration of Instagram use*

All of the variables which demonstrated significant correlations with duration of Instagram use were entered into a regression model to determine how much of the variance they explained together. Multivariable linear regressions were calculated to predict duration of Instagram use based on motivation for 'information sharing', 'social interaction', 'entertainment', 'passing time', 'self-expression' and 'convenience', taking a photograph/video with the main purpose of posting it to Instagram, uploading self-photographs/videos to Instagram, looking at photographs of others on Instagram, participant type (dancer vs. non-dancer) and gender (Table 8). A significant regression equation was found with the model accounting for 33% of the variance in duration of Instagram use ( $F_{11,159}=6.62, p<.001, R^2=.330$ ). For every unit increase in motivation for passing time, duration of Instagram use increased by 22% (in minutes/hours). For every unit increase in motivation for convenience, duration of Instagram use increased by 21% (in minutes/hours).

#### *Model two: Predictors of frequency of Instagram checking*

All of the variables which demonstrated significant correlations with frequency of Instagram checking were entered into a regression model to determine how much of the variance they explained together. Multivariable linear regressions were calculated to predict frequency of Instagram checking based on all seven of the Instagram motivations, taking a photograph/video with the main purpose of posting it to Instagram, uploading self-photographs/videos to Instagram, looking at photographs of others on Instagram, participant type (dancer vs. non-dancer) and gender (Table 9). A significant regression equation was found with the model accounting for 33% of the variance in frequency Instagram checking ( $F_{1,160}=6.02, p<.001, R^2=.330$ ). For every unit increase in motivation for passing time, frequency of Instagram checking increased by 26% (times per day/hours). The frequency of

Instagram use was lower in females by 18% (times per day/hours), indicating that males checked Instagram more frequently than females.

**Table 8. Multivariable regression model one: Duration of Instagram use**

	$\beta$	$t$	$p$
<b>Motivation: Info sharing</b>	.09	1.05	.30
<b>Motivation: Social interaction</b>	-.13	-1.35	.18
<b>Motivation: Entertainment</b>	.04	0.39	.69
<b>Motivation: Passing time</b>	.22	2.46	.02
<b>Motivation: Self-expression</b>	.06	0.50	.62
<b>Motivation: Convenience</b>	.21	2.59	.01
<b>Take photo/video</b>	.12	1.24	.22
<b>Upload photo/video</b>	.19	1.86	.07
<b>Look at others</b>	.02	0.30	.76
<b>Participant type</b>	-.11	-1.47	.14
<b>Gender</b>	-.02	-0.26	.80

**Table 9. Multivariable regression model two: Frequency of Instagram checking**

	$\beta$	$t$	$p$
<b>Motivation: Info sharing</b>	.08	0.88	.38
<b>Motivation: Self-documentation</b>	-.10	-0.95	.34
<b>Motivation: Social interaction</b>	-.12	-1.18	.24
<b>Motivation: Entertainment</b>	.07	0.77	.44
<b>Motivation: Passing time</b>	.26	2.85	.01
<b>Motivation: Self-expression</b>	.21	1.70	.09
<b>Motivation: Convenience</b>	.15	1.80	.07
<b>Take photo/video</b>	.17	1.70	.09
<b>Upload photo/video</b>	.04	0.36	.72
<b>Look at others</b>	.05	0.67	.51
<b>Participant type</b>	-.08	-0.97	.33
<b>Gender</b>	-.18	-2.42	.02

## **Discussion**

The main purpose of this study was to address the need for further research on young people's use of social media and the associations with aspects of their mental health (Royal Society for Public Health and Young Health Movement, 2017; Ditch the Label, 2017; Frith, 2017). It aimed to fill a gap that exists in the literature, by exploring this specifically within a dance population, in which there may be an emphasis on body image and associated risks of self-objectification and disordered eating (Tiggemann & Slater, 2001; Langdon & Petracca, 2010; Alexias & Dimitropoulou, 2011; McEwen & Young, 2011; Arcelus et al., 2014). It also included males who have been under-represented in the literature. The research was designed to explore whether dancers and non-dancers and males and females differed in their engagement and motivations for using Instagram, as well as their levels of self-objectification, body surveillance, disordered eating and depressed mood. Associations between these were then explored, as well as whether all of these variables related to frequency and duration of Instagram use.

Instagram was the most commonly used social media platform by the young people in this study, with 91.5% of the sample reporting that they used Instagram, spending an average of 30 minutes on it per day and checking it every hour. This is in line with previous research indicating that Instagram is the most frequently used social media site by young people (Duggan, 2015; Marengo et al., 2018). In relation to the first research question, dancers reported using Instagram significantly more than non-dancers, spending more time on Instagram than non-dancers and followed more Instagram accounts than non-dancers. There were no differences in availability of Instagram profile, number of Instagram followers or frequency of Instagram checking between dancers and non-dancers.

Dancers were more motivated than non-dancers to use Instagram for information sharing, self-documentation and self-expression. These may all reflect forms of self-presentation, as they include presenting information on one's interests, recording what one has done, learnt and where they have been, showing one's personality and telling others about one's self, which may be considered as ways of expressing aspects of self-identity. This is in line with the research on athletes, which found they use social media for self-presentation and impression management (Smith &

Sanderson, 2015; Geurin-Eagleman & Burch, 2016; Lee & Pederson, 2018). The findings suggest that dancers' interaction with social media is different to non-dancers, in that they are more likely to bring something of themselves and their identity as dancers and portray this using social media as a form of communication, this is consistent with self-presentation theory (Goffman, 1959). Self-presentation theory states that individuals control the impressions others form of them, by selecting and sharing information which is consistent with the image they are trying to portray. There was no difference between dancers and non-dancers for any of the other motivations for using Instagram.

Interestingly, self-expression was the least commonly reported motivation for the overall sample. This conflicts with previous research specific to Instagram which used the same list of motivations employed in the current study and put forward self-expression as the main motivation for use (Alhabash & Ma, 2017). Self-documentation followed by passing time and then social interaction were the most commonly reported motivations for the whole sample in the current study. Therefore, ways of presenting information about one's identity may be more specific in the general population of young people. Namely, through self-documentation (including recording what one has done, learnt and where they have been). The findings in the overall sample supports previous research in relation to the uses and gratification theory (U&G; Katz et al., 1973), which identified the two main motivators that drive social media use as self-presentation and the need to belong (Mäntymäki & Islam, 2016). Within the current study, self-documentation may reflect self-presentation and social interaction (which includes connecting with and meeting new people) may reflect the need to belong.

Dancers reported engaging in all three of the self-presentation activities (including taking a photograph/video for the main purpose of posting it to Instagram, uploading self-photographs/videos to Instagram and editing self-photographs before posting them on Instagram) more than non-dancers. This is consistent with research which links selfie-posting and editing to identity management (Lup et al., 2015; Dumas et al., 2017; Grogan et al., 2018) and suggests dancers may engage in self-presentation through careful preparation, selection and posting of photographs on Instagram. In relation to the appearance-focused surveillance and knowledge gathering activities,

dancers reported looking at photographs of others on Instagram significantly more frequently than non-dancers. Previous research in the general population has shown young people seek out and gain knowledge about others, through viewing their images on Instagram (Lee et al., 2015; Sheldon & Bryant, 2016). There was no significant difference between dancers and non-dancers for comparing self-photographs to photographs of others on Instagram. Indeed, the whole sample reported rarely or never doing this. This conflicts with the idea that young people make appearance comparisons on Instagram as put forward in social comparison theory (Festinger, 1954). No gender differences were found across any of the variables measuring Instagram use (duration and frequency of checking), Instagram activities or motivations to use Instagram. This is an interesting finding as most of the literature on social media use tends to focus on females.

With regards to the second research question, dancers and females had higher body surveillance than non-dancers and males, indicating increased habitual monitoring of their body from an observer's perspective, compared against the internalised cultural ideal (Moradi & Huang, 2008). The increased level of body surveillance in dancers and females supports previous findings (McKinley & Hyde, 1996; Tiggemann & Slater, 2001). For dancers increased body surveillance is likely to have both positive and negative impacts on body image concerns, as it focuses on both appearance and functionality. How a dancer's body functions is an important aspect of their body image, as they rely on their bodies for their craft. However, previous research has indicated that although dancers have an increased appreciation of what their body can do, they also tend to be preoccupied with how their body looks with regards to body weight and striving to achieve the ideal body (Pollatou et al., 2010; Swami & Harris, 2012).

There was no significant difference between dancers and non-dancers nor males and females' self-objectification, disordered eating or depressed mood. This is in contrast with research which highlights increased levels of self-objectification and disordered eating in dancers and athletes who engage in sports in which there is an emphasis on aesthetic appearance (Ravaldi et al, 2003; Francisco et al., 2012; Arcelus et al., 2014). A potential explanation for the lower reported rates of self-objectification and disordered eating for the dance sample in the current study, is

genre of dance. Two-thirds of the dance sample named contemporary dance as the genre that they participated in the most. However, previous research has demonstrated that ballet dancers are often more commonly cited as experiencing body-related and eating difficulties (Ravaldi et al., 2003; García-Dantas, et al., 2013).

Twenty-three per cent of the overall sample scored in the upper quartile for body surveillance and 36% scored in the upper quartile for self-objectification. These findings indicate that around a quarter to over a third of the young people objectified themselves and monitored their body in relation to such objectification. In contrast only 2% of the overall sample scored in the upper quartile for disordered eating. With regards to depressed mood, 28% of the overall sample scored above the clinical cut-off on the PHQ2. This is higher than in the general population, which is around 15% (Staples et al., 2019). Although, it may have been influenced by the larger number of females in the sample, as levels of depressed mood above the clinical cut-off for young females are around 25% (Office for National Statistics, 2017). Furthermore, the PHQ2 is a screening tool rather than a diagnostic tool. So, while it has demonstrated discriminant validity and good sensitivity and specificity at a threshold of  $>3$ , more in-depth measures of depression would be necessary to ascertain the true prevalence of clinical depression in this sample (Staples et al., 2019).

In relation to the final research question, no significant associations were found between any of the Instagram variables (including frequency, duration, activity or motivations for use) and psychological variables in the dance sample. This finding indicates that Instagram use may not be so troublesome in this group. Within the whole sample, no associations were found between Instagram use and self-objectification or disordered eating, with the exception of a significant association between disordered eating and comparing self-photographs to photographs of others on Instagram. This particular finding lends support to Rodger's (2016) model which implicates social comparison as a potential mediator of social media use and eating pathology. However, the lack of other associations in the current study conflicts with previous research, in which associations between both self-objectification and disordered eating with social media use have been found (Bell et al., 2018;

Tiggemann & Barbato, 2018). Significant positive associations were found between body surveillance and all five of the Instagram activities in the whole sample. This is in line with previous findings which found active social media behaviours were associated with body-related constructs (Meier & Gray, 2014; Kim & Chock, 2015, McLean et al., 2015; Cohen et al., 2017; Hogue & Mills, 2019).

Depressed mood was positively associated with motivation for passing time in the whole sample, suggesting those with higher levels of depressed mood used Instagram to pass time. This association may be partly explained by clinical characteristics of depression including withdrawal from social situations (National Institute for Health and Care Excellence; NICE, 2009). The regression analysis findings for the whole sample implicate passive motivations (exposure rather than creation or interaction with content) for Instagram use being associated with increased use, which is reassuring considering previous research suggests active forms of social media use are more concerning (Smith et al., 2013; Mabe et al., 2014; Meier & Gray, 2014; Kim & Chock, 2015; Mclean et al., 2015; Cohen et al., 2017; Hogue & Mills, 2019). This is consistent with Rodger's (2016) model, which highlights motivations for use as a possible moderator of the relationship between social media use and body-related and eating concerns.

### **Strengths and limitations**

A strength of the current study is that it focused on a sample of young people, as these have been found to make up the largest group of Instagram users (Duggan, 2015). It also built upon previous research on the associations between social media use and psychological variables, which have been largely limited to a female sample. The current study extended this to both males (for whom there is evidence of associations between social media use and psychological outcomes; de Vries et al., 2016) and dancers, a group who may be at increased risk to the psychological vulnerabilities associated with social media use. Collaboration and consultation with dance schools in the North of England generated access to young dancers and participation in the project.

Another strength of the current study is that it moved beyond basic assessment of social media use which looks at passive use of social media (e.g. amount of time

spent on social media platforms) and also studied active use (including specific motivations for use and Instagram activities). This is of importance as previous research has indicated that active rather than passive social media use has been associated with body image concerns (Kim & Chock, 2015). Collecting data via an online survey allowed participants privacy and anonymity which may have accounted for social desirability bias. Additionally, most of the measures used in the current study were standardised measures or were taken from high quality published research and have demonstrated good psychometric properties.

A number of limitations are also noteworthy. Within cross-sectional research, cause and effect cannot be established and the direction of associations cannot be inferred. For example, it may be that those with higher body surveillance, upload photographs/videos of themselves more to Instagram or those that upload photographs/videos of themselves more to Instagram have higher body surveillance. It is likely that many of the findings are bi-directional. Cause and effect in this area of research is difficult to investigate. For example, there may be difficulties in asking young people to stop using Instagram for a period of time for research purposes and it is difficult to untangle complex associations, including the impact of numerous other factors. Other variables that have been implicated as mechanisms of change include level of self-esteem (Vogel et al., 2014), culture (Lee, Choi, Kim & Han, 2014; Lee-Won, Shim, Joo & Park, 2014), race (Kapidzic & Herring, 2015) and personality traits such as narcissism (Ong et al., 2011; Fox & Rooney, 2015; Moon, Lee, Lee, Choi & Sung, 2016; Yang, 2016).

Limitations are also evident in the Instagram activity variables measured in the current study, as they do not cover all the ways in which individuals may use Instagram for self-presentation and appearance-focused surveillance and knowledge gathering. For example, seeking out appearance-related feedback through likes and comments. This has been associated with posting more objectified selfies (Bell et al., 2018) and suggested to be the most pervasive use of social media on body dissatisfaction, if individuals use such feedback to shape how they portray themselves online (Rodgers, 2016). It is also noteworthy that the SOQ was reported to be difficult to complete and 21 participants dropped-out at this part of the online survey. Therefore, difficulties in understanding and being able to accurately



complete the SOQ may partly account for the lack of findings for self-objectification, which was implicated as a potential mediator in Rodger's (2016) model of social media use.

The sample recruited in the current study has limited generalisability to other cultures and ethnicities, as a high proportion of the sample were white-British. Although efforts were made to recruit males and females, over half the sample were female and there was a large proportion of females in the dance sample. As convenience sampling was used, there is no way to see who did not decide to participate. Those with more serious eating disorder symptomology may have opted out of participating which may have had an impact on the results found. However, interestingly when analysis was run comparing those who scored highly ( $<25$ ) on the EDE-QS ( $N=7$ ) with the rest of the sample, no differences were found for any of the Instagram variables and the only significant and positive association found for those who scored highly on the EDE-QS was between frequency of Instagram checking and motivation for entertainment ( $r= 1.00, p<.001$ ). This suggests that for those with higher levels of self-reported disordered eating, there is a relationship between how frequently they check their Instagram and being motivated to use Instagram for entertainment reasons. It is noteworthy that the EDE-QS is not a diagnostic tool and therefore it is unclear if any of those that scored highly would have met clinic criteria for an eating disorder diagnosis.

### **Practical implications**

The results indicate that body-related variables, disordered eating and mood are not associated with Instagram use in dancers, however, both dancers and females demonstrated high levels of body surveillance, which may indicate the need for education and support for these groups with regards to body surveillance. One of the dance schools who were recruited from in the current study run a teaching module on body image, including how young dancers perceive themselves and others in relation to the cultural ideal. This may be developed further to incorporate teaching specific to body surveillance. Although it is noteworthy that not all aspects of body surveillance hold negative implications and an awareness of how one's body feels and functions is important for dancers who rely on their bodies as a tool for expression (Milavic & Miletic, 2012). The current study demonstrated some links

between specific types of Instagram use and psychological difficulties in the general population. The importance of these findings is reflected in their practical implications for educating and supporting young people (both males and females) and dancers to reflect on the specific ways in which they actively engage with Instagram and other social media platforms and the potential associations with their psychological well-being, both positive and negative.

Creative ways of providing young people and dancers with guidance on social media should be developed. The Royal Society of Public Health (2017) suggested adding disclaimers to images to highlight their often idealised and edited nature. However, viewing idealised images on social media was found to have a negative influence on body image and mood even when a disclaimer was present (Fardouly & Holland, 2018). Therefore, consideration of other ways that young people and dancers can evaluate and be increasingly aware of the content they are engaging with on social media and the potential impact of this is warranted. For example, the introduction of pop-up warnings on social media, development and implementation of social media literacy programmes as preventative measures, innovative ways of social media platforms identifying users that are at increased risk of psychological vulnerability by their posts and discreetly signposting individuals to sources of support via social media (Frith, 2017; Royal Society of Public Health, 2017; Feltman & Szymanski, 2018).

The UK government has begun to take action with regards to social media and young people's well-being. This includes the introduction of age-appropriate lessons on the use of social media across all stages of the National curriculum, as well as the production of statutory guidance, which includes obligations for appropriate filters and monitoring systems on social media platforms (Frith, 2017). It is also important for clinicians, educators, dance teachers and parents to remain aware of how engaging in particular activities on social media may affect young people's psychological well-being in both helpful and harmful ways, so that this can be integrated into assessment, interventions and support. A range of resources exist to aid parents, schools and professionals, which should be more widely promoted, including MindEd, the Child Exploitation's Online Protection Centre's Thinkuknow programme and the UK Safer Internet Centre (Frith, 2017).

### **Future directions**

Future research examining the use of social media in young dancers may focus on the specific advantages of Instagram use or associations with more positive psychological variables. Beneficial engagement in Instagram including positive self-expression, identity exploration and increased social connections (Brown & Bobkowski, 2011; Quinn & Oldmeadow, 2013; Best et al., 2014; Royal Society for Public Health and Young Health Movement, 2017) have been associated with positive psychological outcomes for young people, such as body appreciation and it would be of interest to see whether this is replicated within a dance population. Given that no associations were found between the psychological variables measured in this study and Instagram use for dancers, other explanatory variables should be considered. Future research on the use of social media by young people and dancers should also aim to address some of the limitations presented in the current study, including using longitudinal and experimental studies. This will help address questions about causation and the directions of associations and see whether social media has a cumulative effect. The current study provides a basis for this future work.

There is also a need to identify mediators. For example, active social media use and psychological difficulties have been found to be mediated by appearance comparisons (Kim & Chock, 2015) and in Rodgers (2016) model, body surveillance, self-objectification and social comparison are all suggested as potential mediators between social media use and body-related concerns. However, stronger relationships and differences need to be established first before a better understanding of mediators is warranted. Future research may also look at the type of post that young dancers/people interact with and specific ways in which they present themselves on Instagram, as these factors may impact on the association with psychological variables. For example, engagement with fitspiration posts have been linked to intentions to engage in extreme weight-loss behaviours and drive for thinness (Lewallen & Behm-Morawitz, 2016; Holland & Tiggemann, 2017), exposure to beauty and fitness images on Instagram has been linked to anxiety, depressive symptoms, self-esteem and body dissatisfaction (Sherlock & Wagstaff, 2018) and a higher frequency of posting objectified selfies on Instagram was associated with self-objectification (Bell et al., 2018).

Instagram was explored in more detail in the current study, as it is a fast-growing but under researched social media platform. It is noteworthy that the platform is quickly evolving. For example, the introduction of the 'stories' facility and live videos, which allow real-time use and were not evaluated in the current study. Further research may explore the different facilities that Instagram offers as it continues to develop and change over time. Additionally, although this is the current popular choice for young people, this is likely to change as other social media platforms are developed. In the current study, Youtube and then Snapchat were the next most commonly used social media platforms and therefore further research may explore the implications of engaging in these platforms for young dancers and young people in general. Why and how young people use other social media platforms, as well as the associated psychological factors is likely to be different, depending on the different functions that each social media platform offer (Alhabash & Ma, 2017). Research is also needed to determine what types of intervention strategies, such as social media literacy groups, might reduce the strength of the relations among social media use and psychological variables in the general population (Feltman & Szymanski, 2018).

## **Conclusions**

This research has contributed to an ever-growing literature on social media use (with a particular focus on Instagram) and psychological vulnerabilities, by exploring this within a dance population, who may be at risk for more body-related concerns. Interestingly, dancers were found to use Instagram more and there was a difference in functionality of Instagram between dancers and non-dancers, specifically in relation to self-presentation. Dancers reported being more motivated to use Instagram for information sharing, self-expression and self-documentation. However, there was no relationship between the psychological vulnerabilities measured in this study and Instagram use for dancers. This positive finding indicates that active use of Instagram may not be so troublesome in this group compared to in the general population. Associations between particular Instagram activities and motivations for Instagram use with body surveillance and disordered eating were found for young people generally. This indicates a need for practical interventions which are tailored to address such associations in young people, as well as to foster

the positive associations with engaging in Instagram for young dancers and young people.

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## **Appendix 1**

### **Ethical approval letter**

**Faculty of Medicine and Health Research Office**  
**School of Medicine Research Ethics Committee (SoMREC)**

Room 9.29, level 9  
Worsley Building  
Clarendon Way  
Leeds, LS2 9NL

03 May 2018

Jennifer Kay  
Psychologist in Clinical Training  
Leeds Institute of Health Sciences  
Faculty of Medicine and Health  
Clinical Psychology  
Level 10, Worsley Building  
University of Leeds  
Clarendon Way  
Leeds, LS2 9NL

Dear Jennifer

Ref no: **MREC17-049**

Title: **Use of Image-Based Social Media in Dancers and Non-Dancers**

Your research application has been reviewed by the School of Medicine Ethics Committee (SoMREC) and we can confirm that ethics approval is granted. Please notify the committee if you intend to make any amendments to the original research ethics application or documentation. All changes must receive ethics approval prior to implementation. Please contact the Faculty Research Ethics Administrator for further information ([fmhuniethics@leeds.ac.uk](mailto:fmhuniethics@leeds.ac.uk))

Ethics approval does not infer you have the right of access to any member of staff or student or documents and the premises of the University of Leeds. Nor does it imply any right of access to the premises of any other organisation, including clinical areas. The committee takes no responsibility for you gaining access to staff, students and/or premises prior to, during or following your research activities.

*Please note:* You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, risk assessments and all other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited.

It is our policy to remind everyone that it is your responsibility to comply with Health and Safety, Data Protection and any other legal and/or professional guidelines there may be.

We wish you every success with the project.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'Naomi Quinton', with a horizontal line underneath.

**Dr Naomi Quinton, Co-Chair, SoMREC, University of Leeds**  
*(Approval granted by Co-Chair Dr Naomi Quinton on behalf of the committee).*

## **Appendix 2**

### **Online survey for dance participants**

#### **Page 1: Information about the study**

This study is about understanding better why and how people use Instagram. Taking part involves answering questions about your Instagram use and how you see yourself. It should take around 15 minutes to complete. You can follow your progress through the bar at the top of each page.

Taking part is completely voluntary and your responses are anonymous. If at any time you decide that you do not want to continue, you can withdraw from the study by closing the browser window. If you do so, your results will not be submitted. Note that you can no longer withdraw once you have clicked the ‘submit’ button.

Ethical approval has been sought from the School of Medicine Research Ethics Committee (project number MREC17-049). Andrew Hill (Professor of Medical Psychology, Division of Psychological and Social Medicine at Leeds University) is supervising this project.

As a thank you for taking part in this study, a donation of £1 will be made for the first one-hundred completed surveys to the Northern School of Contemporary Dance hardship fund and the Academy of Northern Ballet bursary fund. Fifty pence will be donated for every subsequent completed survey.

If the questions raise any issues for you then sources of help and support will be provided at the end of this survey.

If you’d like to know more about the study please contact Jennifer Kay ([umjk@leeds.ac.uk](mailto:umjk@leeds.ac.uk)), Psychologist in Clinical Training at the University of Leeds.

**Once you have clicked on the CONTINUE button at the bottom of each page, you can’t go back to look at or change any answers.**

**Page 2: Confidentiality and consenting (agreeing) to take part in the study**

Ethical approval has been sought from the School of Medicine Research Ethics Committee (project number MREC17-049). Andrew Hill (Professor of Medical Psychology, Division of Psychological and Social Medicine at Leeds University) is supervising this project.

Please read the following information before deciding whether or not to take part in the study.

- I know that taking part in the study is my decision and that I can stop at any time without giving a reason
- I have read and understood the “Information about the study” section
- I understand that if I need any more information about the study then I can contact Jennifer Kay at the University of Leeds on [umjk@leeds.ac.uk](mailto:umjk@leeds.ac.uk)
- I understand that my name won’t appear on any information I provide and everything will be kept confidential
- I understand that by continuing with this survey, I’m agreeing to take part in the study

**By clicking on "Continue", I agree to participate in the study.**

**Page 3: Information about you**

Please enter your age:

Are you:

Male

Female

Not Specified

Are you:

White British

White Irish

Any other White background

Mixed: White and Black Caribbean

Mixed: White and Black African

Mixed: White and Asian

Any other mixed background

Asian or Asian British

Black or Black British

Other (please specify)

For how many years have you participated in dance:

Less than a year

One year

Two years

Three years

Four years

More than five years

What genre of dance do you participate in the most:

Ballet

Contemporary

Urban (e.g. Street, Hip-hop)

Commercial (including Jazz)

Ballroom

Cultural (e.g. South African or Asian)

Other

Do you participate in other higher level sports or athletics:

No

Yes

**Page 4: Social media use**

*The following questions are about your use of Instagram:*

Do you use Instagram:

Yes

No

How many followers do you have on Instagram:

How many Instagram accounts are you following:

What is the availability of your Instagram profile:

Public

Private

Don't Know

On a typical day, how often do you check Instagram:

Not at all

Once a day

Every few hours

*Every hour*

*Every 30 minutes*

*Every 10 minutes*

*Every 2 minutes*

Overall, how long do you spend on Instagram on a typical day:

*5 minutes or less*

*15 minutes*

*30 minutes*

*1 hour*

*2 hours*

*4 hours*

*6 hours*

*8 hours*

*10 hours or more*

For each item, please select the answer that best characterises your attitudes or behaviours.

I use Instagram ...

To share information

To share information useful to people

To present information on my interest/s

To record what I do in life

To record what I have learned

To record where I have been

To connect with people who share some of my values

To connect with people who are similar to me

To meet new people

To entertain myself

Because it is enjoyable

Because it helps pass the time

Because I have nothing better to do



Because it relaxes me

To show my personality

To tell others about myself

Because it is easy to use

Because it is convenient

How often do you do the following:

Upload photographs/videos of myself to Instagram

Take a photo/video for the main purpose of posting it on Instagram

Edit photographs of yourself before posting them on Instagram (including using filters, cropping or cutting parts of yourself out of photographs and using Photoshop or other photo editing software or applications)

Look at photographs of others on Instagram (e.g. using explore, checking out pages and viewing images of others more generally)

Compare your photographs to photographs of others on Instagram

How often do you use each of the social media platforms listed below. Rate on a scale from never to every day:

Instagram

Facebook

Twitter

Snapchat

Youtube

Pinterest

Other

### **Page 5: How I see myself**

The questions below identify 10 different body attributes. Please rank order these body attributes from that which has the greatest impact on your physical self-concept (rank this a "9"), to that which has the least impact on your physical self-concept (rank this a "0").

Note: It does not matter how you describe yourself in terms of each attribute. For example, fitness level can have a great impact on your physical self-concept regardless of whether you consider yourself to be physically fit, not physically fit, or any level in between.

Please first consider all attributes at the same time and record your rank ordering by writing the ranks in the rightmost column.

**IMPORTANT:** Do not assign the same rank to more than one attribute!

When considering your physical self-concept...

9 = greatest impact

8 = next greatest impact

1 = next to least impact

0 = least impact

1 . . . what rank do you assign to physical coordination? \_\_\_\_\_

2 . . . what rank do you assign to health? \_\_\_\_\_

3 . . . what rank do you assign to weight? \_\_\_\_\_

4 . . . what rank do you assign to strength? \_\_\_\_\_

5 . . . what rank do you assign to sex appeal? \_\_\_\_\_

6 . . . what rank do you assign to physical attractiveness? \_\_\_\_\_

7 . . . what rank do you assign to energy level (e.g., stamina)? \_\_\_\_\_

8 . . . what rank do you assign to firm/sculpted muscles? \_\_\_\_\_

9 . . . what rank do you assign to physical fitness level? \_\_\_\_\_

10 . . . what rank do you assign to measurements (e.g., chest, waist, hips)? \_\_\_\_\_

**Page 6: How I see myself**

For each item, please select the answer that best characterises your attitudes or behaviours:

I rarely think about how I look.

I think it is more important that my clothes are comfortable than whether they look good on me.

I think more about how my body feels than how my body looks.

I rarely compare how I look with how other people look.

During the day, I think about how I look many times.

I often worry about whether the clothes I am wearing make me look good.

I rarely worry about how I look to other people.

I am more concerned with what my body can do than how it looks.

Over the past two weeks, how often have you been bothered by any of the following problems:

Little interest or pleasure in doing things

*0 = Not at all 1 = Several days 2 = More than half the days 3 = Nearly every day*

Feeling down, depressed, or hopeless

*0 = Not at all 1 = Several days 2 = More than half the days 3 = Nearly every day*

**Page 7: Your feelings about body shape, weight and eating**

On how many of the past 7 days...

Have you been deliberately trying to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded)?

Have you gone for long periods of time (e.g. 8 or more waking hours) without eating anything at all in order to influence your weight or shape?

Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?

Has thinking about your weight or shape made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?

Have you had a definite fear that you might gain weight?

Have you had a strong desire to lose weight?

Have you tried to control your weight or shape by making yourself sick (vomit) or taking laxatives?

Have you exercised in a driven or compulsive way as a means of controlling your weight, shape or body fat, or to burn off calories?

Have you had a sense of having lost control over your eating (at the time that you were eating)?

On how many of these days (*i.e. days on which you had a sense of having lost control over your eating*) did you eat what other people would regard as an unusually large amount of food in one go?

Over the past 7 days...

Has your weight or shape influenced how you think about (judge) yourself as a person?

How dissatisfied have you been with your weight or shape?

**Thank you very much for taking part in this study.**

If you have found the survey raised issues that you haven't really thought about before and would like to speak to someone about these thoughts and feelings, we suggest you talk to someone close to you, such as a parent, doctor or counsellor. We'd also recommend looking at these websites for more support and guidance:

[www.youngminds.org.uk](http://www.youngminds.org.uk)

[www.bodygossip.org](http://www.bodygossip.org)

[www.thesite.org](http://www.thesite.org)

Thank you for all your help!

If you have any questions, please feel free to contact the researcher.

## **Appendix 3**

### **Online survey for non-dance participants**

#### **Page 1: Information about the study**

This study is about understanding better why and how people use Instagram. Taking part involves answering questions about your Instagram use and how you see yourself. It should take around 15 minutes to complete. You can follow your progress through the bar at the top of each page.

Taking part is completely voluntary and your responses are anonymous. If at any time you decide that you do not want to continue, you can withdraw from the study by closing the browser window. If you do so, your results will not be submitted. Note that you can no longer withdraw once you have clicked the 'submit' button.

Ethical approval has been sought from the School of Medicine Research Ethics Committee (project number MREC17-049). Andrew Hill (Professor of Medical Psychology, Division of Psychological and Social Medicine at Leeds University) is supervising this project.

As a thank you for taking part in this study, a donation of £1 will be made for the first one-hundred completed surveys to the Northern School of Contemporary Dance hardship fund and the Academy of Northern Ballet bursary fund. Fifty pence will be donated for every subsequent completed survey.

If the questions raise any issues for you then sources of help and support will be provided at the end of this survey.

If you'd like to know more about the study please contact Jennifer Kay ([umjk@leeds.ac.uk](mailto:umjk@leeds.ac.uk)), Psychologist in Clinical Training at the University of Leeds.

**Once you have clicked on the CONTINUE button at the bottom of each page, you can't go back to look at or change any answers.**

**Page 2: Confidentiality and consenting (agreeing) to take part in the study**

Ethical approval has been sought from the School of Medicine Research Ethics Committee (project number MREC17-049). Andrew Hill (Professor of Medical Psychology, Division of Psychological and Social Medicine at Leeds University) is supervising this project.

Please read the following information before deciding whether or not to take part in the study.

- I know that taking part in the study is my decision and that I can stop at any time without giving a reason
- I have read and understood the “Information about the study” section
- I understand that if I need any more information about the study then I can contact Jennifer Kay at the University of Leeds on [umjk@leeds.ac.uk](mailto:umjk@leeds.ac.uk)
- I understand that my name won't appear on any information I provide and everything will be kept confidential
- I understand that by continuing with this survey, I'm agreeing to take part in the study

**By clicking on "Continue", I agree to participate in the study.**

**Page 3: Information about you**

Please enter your age:

Are you:

Male

Female

Not Specified

Are you:

White British

White Irish

Any other White background

Mixed: White and Black Caribbean

Mixed: White and Black African

Mixed: White and Asian

Any other mixed background

Asian or Asian British

Black or Black British

Other (please specify)

Do you participate in dance:

Yes

No

If applicable- for how many years have you participated in dance:



Less than a year

One year

Two years

Three years

Four years

More than five years

If applicable- What genre of dance do you participate in the most:

Ballet

Contemporary

Urban (e.g. Street, Hip-hop)

Commercial (including Jazz)

Ballroom

Cultural (e.g. South African or Asian)

Other

Do you participate in other higher level sports or athletics:

No

Yes

**Page 4: Social media use**

*The following questions are about your use of Instagram:*

Do you use Instagram:

Yes

No

How many followers do you have on Instagram:

How many Instagram accounts are you following:

What is the availability of your Instagram profile:

Public

Private

Don't Know

On a typical day, how often do you check Instagram:

Not at all

Once a day

Every few hours

*Every hour*

*Every 30 minutes*

*Every 10 minutes*

*Every 2 minutes*

Overall, how long do you spend on Instagram on a typical day:

*5 minutes or less*

*15 minutes*

*30 minutes*

*1 hour*

*2 hours*

*4 hours*

*6 hours*

*8 hours*

*10 hours or more*

For each item, please select the answer that best characterises your attitudes or behaviours.

I use Instagram ...

To share information

To share information useful to people

To present information on my interest/s

To record what I do in life

To record what I have learned

To record where I have been

To connect with people who share some of my values

To connect with people who are similar to me

To meet new people

To entertain myself

Because it is enjoyable

Because it helps pass the time

Because I have nothing better to do

Because it relaxes me

To show my personality

To tell others about myself

Because it is easy to use

Because it is convenient

How often do you do the following:

Upload photographs/videos of myself to Instagram

Take a photo/video for the main purpose of posting it on Instagram

Edit photographs of yourself before posting them on Instagram (including using filters, cropping or cutting parts of yourself out of photographs and using Photoshop or other photo editing software or applications)

Look at photographs of others on Instagram (e.g. using explore, checking out pages and viewing images of others more generally)

Compare your photographs to photographs of others on Instagram

How often do you use each of the social media platforms listed below. Rate on a scale from never to every day:

Instagram

Facebook

Twitter

Snapchat

Youtube

Pinterest

Other

### **Page 5: How I see myself**

The questions below identify 10 different body attributes. Please rank order these body attributes from that which has the greatest impact on your physical self-concept (rank this a "9"), to that which has the least impact on your physical self-concept (rank this a "0").

Note: It does not matter how you describe yourself in terms of each attribute. For example, fitness level can have a great impact on your physical self-concept regardless of whether you consider yourself to be physically fit, not physically fit, or any level in between.

Please first consider all attributes at the same time and record your rank ordering by writing the ranks in the rightmost column.

**IMPORTANT:** Do not assign the same rank to more than one attribute!

When considering your physical self-concept...

9 = greatest impact

8 = next greatest impact

1 = next to least impact

0 = least impact

1 . . . what rank do you assign to physical coordination? \_\_\_\_\_

2 . . . what rank do you assign to health? \_\_\_\_\_

3 . . . what rank do you assign to weight? \_\_\_\_\_

4 . . . what rank do you assign to strength? \_\_\_\_\_

5 . . . what rank do you assign to sex appeal? \_\_\_\_\_

6 . . . what rank do you assign to physical attractiveness? \_\_\_\_\_

7 . . . what rank do you assign to energy level (e.g., stamina)? \_\_\_\_\_

8 . . . what rank do you assign to firm/sculpted muscles? \_\_\_\_\_

9 . . . what rank do you assign to physical fitness level? \_\_\_\_\_

10 . . . what rank do you assign to measurements (e.g., chest, waist, hips)? \_\_\_\_\_

**Page 6: How I see myself**

For each item, please select the answer that best characterises your attitudes or behaviours:

I rarely think about how I look.

I think it is more important that my clothes are comfortable than whether they look good on me.

I think more about how my body feels than how my body looks.

I rarely compare how I look with how other people look.

During the day, I think about how I look many times.

I often worry about whether the clothes I am wearing make me look good.

I rarely worry about how I look to other people.

I am more concerned with what my body can do than how it looks.

Over the past two weeks, how often have you been bothered by any of the following problems:

Little interest or pleasure in doing things

*0 = Not at all 1 = Several days 2 = More than half the days 3 = Nearly every day*

Feeling down, depressed, or hopeless

*0 = Not at all 1 = Several days 2 = More than half the days 3 = Nearly every day*

**Page 7: Your feelings about body shape, weight and eating**

On how many of the past 7 days...

Have you been deliberately trying to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded)?

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[www.thesite.org](http://www.thesite.org)

Thank you for all your help!

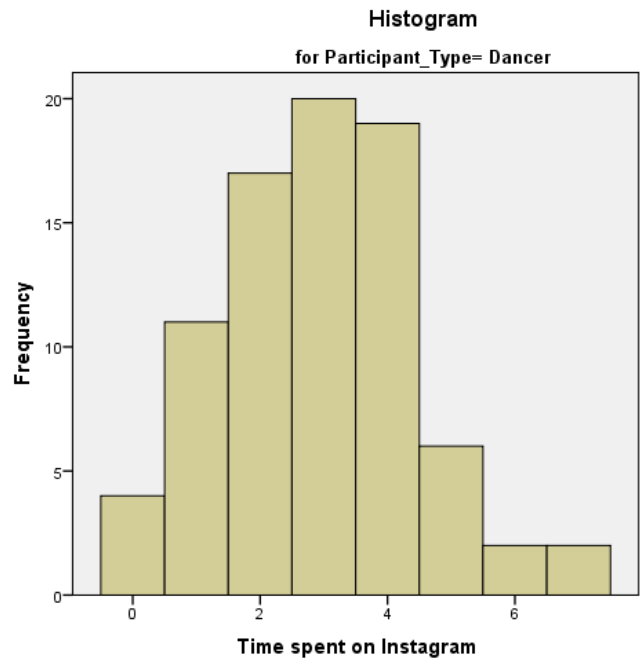
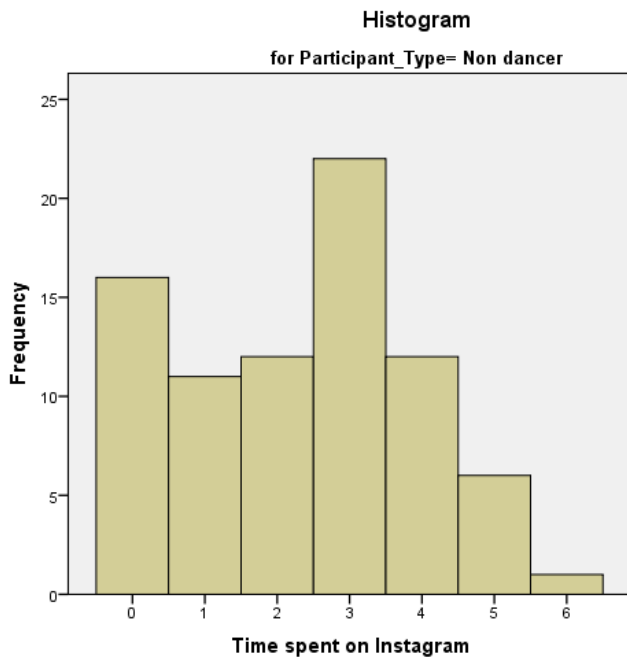
If you have any questions, please feel free to contact the researcher.



## Appendix 4

### Example of tests for normality and homogeneity of variance

#### Histograms



#### Kolmogorov-Smirnov statistic

The duration of Instagram use for dancers  $D(81) = 0.12$ ,  $p < .005$  and non-dancers  $D(80) = 0.18$ ,  $p < .001$  were both significantly non-normal.

#### Levene statistic

For duration of Instagram use, the variances were equal for dancers and non-dancers,  $F(1, 159) = 1.61$ , ns ( $p > .05$ ).

## Appendix 5

### Bivariate correlations for Instagram use variables and psychological variables for females

[illegible]

<b>10. Self-express.</b>	.22	.22	.32*	.28*	.41*	.62*	.50*	.19	.06										
<b>11. Convenience</b>	.29*	.38*	-.09	.05	.22*	.12	.26*	.31*	.35*	.22									
<b>12. Take photo</b>	.23	.27*	.30*	.27*	.29*	.39*	.25	.13	.06	.50*	.16								
<b>13. Upload</b>	.27*	.16	.26*	.21	.30*	.49*	.23	.01	-.11	.59*	.08	.52*							
<b>14. Edit photo</b>	-.08	.01	.16	.09	.11	.25	.08	-.17	-.13	.21	-.14	.27*	.25*						
<b>15. Look others</b>	.14	.17	.18	.03	.07	.09	.10	.13	.14	.15	.02	.23	.06	.15					
<b>16. Compare</b>	-.02	.15	.20	.09	-.00	.11	.13	.01	.23	.19	.05	.27*	.03	.30*	.35*				
<b>17. Self-object.</b>	.08	-.04	.06	-.06	-.01	-.03	-.14	-.07	-.17	-.00	-.02	-.12	.04	-.04	-.05	.10			
<b>18. Body surv.</b>	-.02	.04	.23	.15	-.08	.02	.13	.00	.03	.20	-.13	.26*	.03	.09	.23	.06	-.27*		
<b>19. Dis. eating</b>	-.13	-.06	.08	.10	-.02	-.03	.10	.11	.11	.01	-.01	-.02	-.21	-.01	.06	-.04	-.19	.53*	
<b>20. Mood</b>	-.22	-.08	-.19	-.08	-.12	-.27*	-.02	.01	.18	-.19	.04	.29*	-.39*	-.12	-.08	.01	-.13	.28*	.53*

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\*Significant at  $p \leq .01$